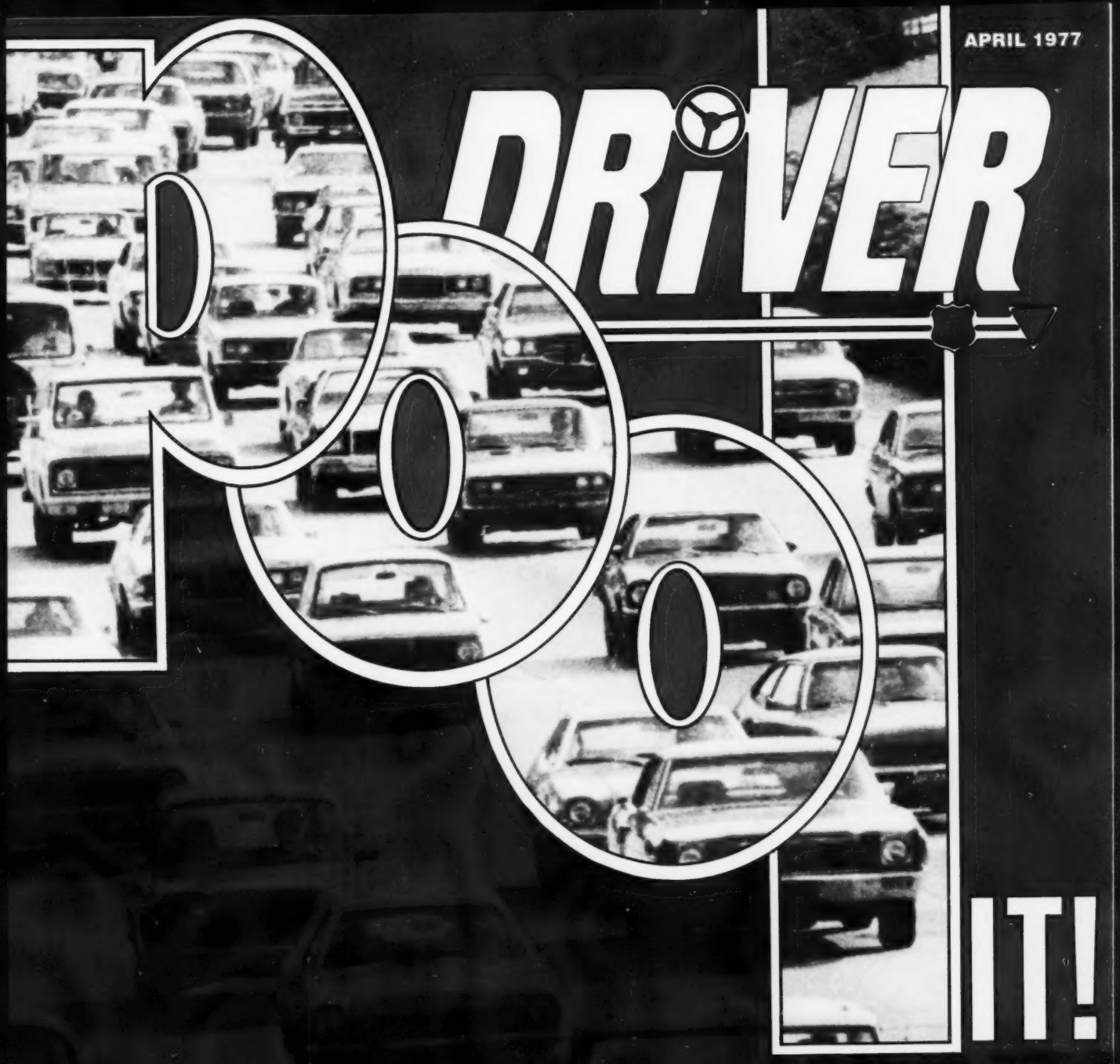
APRIL 1977

DRIVER



...IT!

...WITH A VAN, MAN.

DRiVER

(above, top)
Serviced and ready for their Air Force and corporate riders, these vans receive preferred parking in a central location at the Aerospace/Air Force complex in El Segundo, Calif.

(above)
Virtues of vanpooling are cleverly extolled to other motorists through signs on all Aerospace/Air Force maxi-vans as pointed out by (L to R) SSgt Jim Harris, Sgt Mark Copeland, and 1st Lt Cathy Roeder of the Space and Missile Systems Organization in Los Angeles.

Commute

With gasoline prices going higher and even threatening to double again by 1980, more and more motorists are turning to car or vanpooling as the best way to beat the high costs of driving back and forth to work.

Twenty million Americans already have learned that ride-sharing saves an average of $281 to $654 a year on just an ordinary 20-mile daily roundtrip to work. But that's only the frosting on the cake. They also have discovered a flock of other benefits from carpooling:

- You don't have the hassle of driving to work every day. You arrive on the job more relaxed, refreshed, and congenial and go home the same way.
- Your efficiency and morale on the job both go up and your tardiness and absence rates go down. You get home on time and enjoy your homelife more.

You're probably cheating yourself if you don't read this article.

■ Pooling often eliminates the need for an extra car for family needs.

■ Pooling cuts down highway congestion more than any single device or technique yet developed. For every commuter van on the road, for example, six to 12 other vehicles are eliminated. This reduces the accident potential by an almost proportionate ratio, thereby saving lives and injuries and millions of dollars in property damages and related costs.

■ Pooling saves what has become one of the world's most precious commodities—fuel—millions of gallons daily.

■ Fewer vehicles on the highways in turn reduces air pollution. Literally tens of tons of contaminants are eliminated every day.

■ Pooling reduces the requirement for off-street parking spaces. This fact alone saves Uncle Sam, business, and industry an estimated billion dollars in parking lot purchase, construction, and maintenance costs annually.

You can probably add to the list, but these are the major benefits from pooling rides. Selfishly, the one that appeals to most of us is the personal money-saving angle, but any one is a good reason to read on.

In an article titled "Carpooling's Contagious" in the February 1976 issue of DRIVER, we extolled the virtues of neighbors and friends sharing rides in their private autos. This is still the easiest, simplest system of pooling. But something more magical, even glamorous, is happening around the country. It's called commute-a-vanning. It opens broad new horizons for all commuters, especially for government employees, both military and civilian.

Howdya like to really live more comfortably and save over a thousand bucks a year for starters—no strings attached?

Carpooling Made Better. Pioneered by the big 3M Company of St. Paul back in 1972, this single-company sponsorship method of ride-sharing in a van has been copied by hundreds of firms around the country such as the Aerospace Corporation's program with the Air Force in Los Angeles (explained later in article).

There are several types of vanpooling. A new one involves forming a non-profit corporation which publicly recruits subscribers (employees) from any interested company or organization in the area. It then leases vans and coordinates their

continued

Or maybe you'd like to have free use of a neat maxi-van and pocket hundreds more just for driving some friends back and forth to work with you?

-a-Vanning's Here!

DRIVER

THE TRAFFIC SAFETY MAGAZINE FOR THE MILITARY DRIVER

APRIL 1977

VOLUME 10 NUMBER 11

CONTENTS

FEATURES PAGE

Commute-a-Vanning's Here 1
Handling Emergencies 8
Hydroplaning . . . On A 3500 Pound Water Ski 14
Second Annual Trivia and Nostalgia Test 26

DEPARTMENTS

Double Clutch 2
The Backyard Mechanic 20
Timely Topics 25
Backfire 28
Emergency! ..... Back Cover

DEPARTMENT OF THE AIR FORCE ■ HQ AIR FORCE INSPECTION AND SAFETY CENTER
Norton Air Force Base, California 92409

Lt Gen JOHN P. FLYNN
The Inspector General, USAF

PUBLISHED IN COOPERATION WITH THE DEPARTMENT OF THE ARMY AND THE DEPARTMENT OF THE NAVY

Dr. FRANCIS S. McGLADE
Director of Safety
United States Army

Maj Gen RICHARD E. MERKLING
Director
Aerospace Safety USAF

RADM ROBERT F. DUNN
Commander
Naval Safety Center

Col DAVID E. RALEY
Chief, Safety Education Division

VIRGINIA HENDRIX
Editor

SSgt DON HOLT
Technical Editor

FRANCIS R. (FRAN) FOWLER
Feature Editor

DON KELLEHER
Art Director

LORRAINE HAMBLEN
Staff Artist

ALICE MILKEY
Editorial Administration

MSgt MIKE KEEFE CLIFF MUNKACSY
Staff Photographers

AFRP 127-1

Entered as a Controlled Circulation Rate Publication (USPS No. 335490)
at Santa Ana, CA 92711.

SUBSCRIPTION—DRIVER is available on subscription for $8.65 per year domestic; $2.20 additional for foreign mailing, 75c per copy, through the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Changes in subscription mailings should be sent to the above address. Single copies will be sold and back copies will be furnished when available. Use of funds for printing this publication has been approved by Headquarters, United States Air Force, Department of Defense, Washington, D.C. No payment can be made for manuscripts submitted for publication. Contributions are welcomed, as are comments and criticism. Address all correspondence to the Editor, DRIVER Magazine, AFISC/SEDD, Norton AFB, CA 92409.

ATTENTION DEPT OF THE NAVY PERSONNEL: Address all queries concerning distribution to NAVSAFECEN, NAS, NORFOLK, VA 23511, Attn: Safety Publications Dept. All other correspondence will be welcomed by the Editor.

The contents of this magazine are informative and should not be construed as regulations, technical orders, or directives unless stated. Address reprint requests, stating intended use of material, to the Editor. The Editor reserves the right to make any editorial changes in manuscripts which he believes will improve the material without altering the intended meaning.

Certain individuals shown in this magazine are not members of the Air Force and therefore do not conform to Air Force grooming standards.

THE EDITOR SPEAKS

DOUBLE CLUTCH

DRIVERS DIG DIGITAL DASHES

Electronic, computerized, dashboards already are appearing on some of the world's custom cars like the $24-G Aston Martin Lagonda, but the word from Michigan's Motor City is that the average American driver can soon expect the same on production autos in this country.

Clusters of mechanical instruments now behind steering wheels will be replaced by a single lighted panel electronically monitoring all aspects of a car's performance. A digital speedometer-odometer not only will serve the usual functions but also—if so programmed—will be able to compute the number of miles per gallon of fuel you're getting, the number of gallons necessary to complete a designated trip, and your projected arrival time.

Smith Industries of England already has a prototype speedometer which projects digital readouts onto the windshield, allowing the driver to check his speed instantly. In fact, engineers say there is almost no limit to what information can be flashed to a driver and his passengers.

Detroit automakers are reportedly excited over digital dashboards because of the increased safety obtainable with clear, instantly accessible information. Solid-state circuitry also will mean lighter, smaller, and cooler components for more efficient packaging in small cars, which industry sources emphasize are here to stay.

You'll start seeing digital displays on higher priced production cars like Caddies and Continentals before 1980, and auto electronics for the average car buyer aren't expected to be far behind because of the already advanced state of the art. Designers cite electronic wristwatches, clock-radios, CB and

continued on page 25

commute-a-vanning's here!

continued

Most Aerospace/Air Force vans are outfitted with two factory bucket seats up front (left) and custom-installed airline-type reclining seats in the rear (right). Commuters, some who ride up to 120 miles per day roundtrip, are willing to pay a few bucks extra per month in fares for more comfortable seating. At left, Lt Cathy Roeder and SSgt Jim Harris chat while waiting for other riders.

operation on a cost-sharing basis among all riders. Such an enterprise in the central business district of Los Angeles is now the nation's fastest growing vanpool.

Another new type of subscription vanpool utilizes private van owner-operators who operate in partnership with a local or state governmental agency. The agency provides standards of operation and guarantees 90% of any capital loss by the van owner in his first year of operation. This system is just getting underway in Southern California's San Bernardino and Riverside Counties.

A fourth form is the "brokerage" concept pioneered by the University of Tennessee in which a van is leased to an individual operator who then enlists paid passengers.

So successful and so unlimited is the potential of the current van movement that representatives of some 30 companies last fall formed the National Association of Van Pool Operators (NAVPO). The nonprofit group will hold its first meeting in New Orleans, April 14-15, with several military agencies and installations planning to send observers.

NAVPO President David J. Lester of Atlantic Richfield Company said its purpose is to bring together the nation's vanpoolers to exchange ideas on how to spread the vanpool message, how to work together to get favorable rates when buying and insuring vans, and how to provide efficient maintenance and safety systems. The group also will seek to deregulate vanpools at state levels and to establish uniform operating legislation where required.

Private corporations and some local agencies can buy or lease vans and let their employees or the general public use them on a cost-sharing, nonprofit basis. But what about government agencies like the Army, Navy, Air Force, Marine Corps, and Coast Guard?

Laws prohibit the use of federal funds to underwrite in any way the costs of transporting government employees between their homes and places of work. As a result, commute-a-vanning to Department of Defense facilities has long been hamstrung, except for those few hardy souls who have bought vans and formed pools on their own.

We couldn't have written this six months ago, but today there are some ways around this legal snarl as some enterprising military installations are happily discovering. Before looking at a new Air Force vanpool in Omaha, Neb., and a new Navy program in Norfolk, Va., however, let's examine the current state of the art. An indepth, nationwide review by DRIVER revealed nothing but success stories.

Success Stories. 3-M went from six 12-passenger vans in its first year to 67 a year later. Today it operates 92 vans in the Twin Cities area of Minnesota with an average occupancy factor of 11.1 persons. Monthly fares vary from $16 to $34 for one-way distances ranging from 5 to more than 50 miles.

3-M also reports its vans have replaced an average of seven private vehicles per van, eliminated the need for 650 parking stalls, and saved the company about $2.5 million in capital costs for parking space. Its fleet averages 49 miles per daily roundtrip while traveling 8,367,000 miles per year, saves 679,000 gallons of gasoline annually, and simultaneously eliminates 1,321 tons of air pollutants (smog!!).

Vanning is also fun. One 3M engineer said members of his van group formed sort of a club and have "a high old time," meeting for lunches and occasionally on weekends for family outings.

Continental Oil Company of Houston which operates 54 vans in 11 pools in seven states for its employees, found vanpools cut both tardiness and one-day absences. "If you have a hangover or are just sleepy you might ordinarily call in sick," related the firm's director of special projects, "but in a van, the 11 other passengers would kid you the next morning. Peer pressure makes you come to work." The company hopes to double its van fleet this year and may accept noncompany riders to help save energy and reduce air pollution.

In the downtown and mid-Wilshire business districts of Los Angeles, 70 multi-company, super-luxury vans already are carrying 700 passengers daily with 2,100 other commuters signed for 200 more vans to be delivered this month. Co-sponsor Atlantic Richfield Company believes 5,000 will be vanning to work by year's end and ultimately up to 100,000 persons. The reason, says an ARCO spokesman: "Vanpooling offers something for everyone. Riders join for comfort, convenience, and camaraderie. En route they can read, sip coffee, chat with a fixed group of neighbors, or sleep—many riders bring pillows."

Los Angeles' new 10-passenger maxivans have custom-refurbished interiors equipped with airline-style reclining seats (some with pull-out desk trays); individual reading lights, ash trays, cup holders, and stereo music jacks (riders provide their own stereo headphones); carpeted walls and ceilings for soundproofing; air conditioning; and tinted glass windows. Each van also has seat belts, built-in fire extinguishers, flares, and built-in safety triangles.

continued

Good rearview mirrors are absolute musts to all-round visibility for van drivers, according to 1st Lt Cathy Roeder of the Los Angeles Air Force Station.

Installing a vacuum gauge in a maxi-van enables its driver to improve his driving habits thereby increasing the van's fuel economy.

A specially numbered decal on the back bumper of Yeoman 3rd Class Pam Kintz's car permits preferred parking at the Navy Fleet Antisubmarine Warfare Training Center in San Diego. The center issues a carpool decal to any driver verifying that he carries at least one other person to work, even if that person is his spouse or neighbor who is employed elsewhere in the area.

Under the Los Angeles program, vans are leased from Crocker Bank to Commuter Computer (CC). It is a nonprofit, regional corporation that promotes car, van, and buspooling in five sprawling Southern California counties where the ratio of vehicles per person is greater than anywhere else in the United States and the average cost of operating a car is $2,716 a year.

CC is funded and freely supported by both the private sector and government to (1) save energy, (2) cut air pollution, (3) help prevent traffic congestion and accidents, and (4) reduce both on- and off-street parking space requirements.

CC conducts commuter surveys to identify potential vanpool subscribers, matches them through computers according to residence, job location, and working hours, signs up riders, maps out pickup routes, selects and trains van operators, and then administers the leasing and cost-sharing of vans. Maintenance is Crocker Bank's responsibility under its lease plan.

Individual vanpool fares range from $49 to $63 per month, depending on distance traveled. Some companies pay a portion or all of their employees' fares in lieu of providing free parking. By comparison, the basic operating costs to drive a 60-mile daily roundtrip in a standard-size car are $115 a month, or more than twice the monthly vanpool fare of $56 for a similar trip.

Government Workers Get in the Act. Aerospace Corporation of El Segundo, Calif., a nonprofit Air Force subsidiary, began self-supporting commute-a-van operations in April 1975. It started with an 11-van fleet carrying riders over roundtrip distances of 25 to 110 miles and expanded to 18 leased vans a year later. Because Aerospace is located adjacent to the Air Force Space and Missile System Organization of Los Angeles, its vans also were made available to SAMSO's military and civil service members. The marriage has proved to be exceptionally profitable for the two organizations' 6,000 employees.

Although Aerospace/SAMSO already had a successful carpool program going (it was chartering five 40-passenger buses to pick up employees living up to 85 miles away, and many other workers were riding local transit buses), vanpooling caught on immediately and became the easy, economical, glamourway to commute.

A recent survey showed 19% of vanpoolers were being picked up in front of their homes while 44% walked and 37% drove to pickup points. Five percent of all commute-a-vanners said their new lifestyle permitted them to sell a car, 15% avoided buying another car, 35% deferred replacing an existing car, and 45% were unaffected.

What are the advantages of vanpooling, according to the Aerospace/SAMSO study? Riders replied in this order: Not having to drive, reduced costs, increased personal time, increased safety and reliability, and increased car availability at home.

As to service characteristics, Aerospace/SAMSO vanpoolers ranked on-schedule performance No. 1, followed closely by a reasonable fare structure. Next were deluxe seating and comfort, and the convenience of home pickup.

Because many features of the Aerospace/SAMSO vanpool can be adapted to the needs of other closely-located private companies and military agencies, DRIVER is highlighting a few.

Selecting the Driver. Van operators must be Aerospace Corporation employees but backup drivers can be Air Force or DOD civilian members. After candidates fill out a special application form, they are chosen by an Operator Selection Subcommittee on the following criteria:

1. Safe driving record.
2. Good attendance record, whether absences are involuntary or work-related.
3. Sufficient automotive know-how to recognize existing or potential mechanical problems.
4. Ability to handle responsibilities such as organization and maintenance of the commuter group and simple accounting of money and record-keeping.
5. Residence in an area at sufficient distance and with a sufficient employee concentration to support a pool.

Driver Duties. After special instruction in vehicle safety and the operation and maintenance of their particular vans, Aerospace/SAMSO drivers are assigned specific responsibilities:

1. Organize and maintain a pool of at least eight riders (break-even number) with assistance from the company's computers and vanpool coordination office.
2. Plan routes and passenger pickup times and locations.

Lovers of Southern California's high desert country save money while shuttling 80 miles roundtrip daily between their homes in Hesperia and jobs in San Bernardino and Norton AFB. Driver Steve Boyd, left, purchased the Plymouth Voyager Van under a special state and community program which finds riders and guarantees him up to 90% of any capital loss during his first year of vanpooling.

An added bonus offered car and vanpoolers is the use of freeway express lanes where available. Here a 10-passenger luxury maxi-van finds clear sailing amid rush-hour traffic on the San Bernardino Freeway in Southern California.

3. Keep records of rider participation, compute and collect fares, and deliver all proceeds to the vanpool office.

4. Keep the van clean at all times.

5. Keep the van adequately fueled. Regularly check oil, water, transmission, brake, and other fluid levels, also the pressure and condition of tires. (Lubrication, tire replacement, tuneups, mechanical repairs, and other periodic servicing are performed by the company's maintenance shop.)

6. Arrange for backup drivers during periods of illness, vacations, or other absences. Financial arrangements for the backup driver are between the two.

Driver Benefits. Commute-a-van operators literally earn their "wages." Other vanpools may vary, but here are benefits accruing to Aerospace drivers:

1. Free transportation to and from work.

2. Personal family use of the van within a 100-mile radius during non-working hours at a cost of eight cents per mile. Longer trips must be approved in advance, and use of a van for public activities is discouraged.

3. Retention of all income from the ninth regular rider on 10-passenger vans and the 11th rider on 12-passenger models, plus a portion of fares from casuals riding on a space-available basis.

Commuter Fares. Aerospace/SAMSO's fare schedule combines fixed costs (leasing, special equipment, insurance, and license) which are the same for all vans, and variable or operating costs (fuel, maintenance, tires, etc.) which vary with mileage. Approximately one-third of the break-even costs are charged as a monthly subscription fee, the remainder as a daily fare. In this way some relief is provided for those riders who for personal or business reasons are forced to miss one or more days a week.

Regular riders pay the monthly subscription fee at the beginning of each month, along with an amount equal to the daily rate times the number of days ridden during the preceding month. Each regular rider is asked to make a deposit equal to an average month's fees at the time he joins a vanpool. Riders pay by checks made out to Aerospace and given to their drivers. Part-time or casual commuters may ride on a space-available basis at a daily rate about 20% higher than the rate for regular riders. While it's the operator's job to rustle up casuals, there seems to be a ready supply for most vans.

Vehicle Selection. The primary vans in use today by many vanpools are Dodge and Plymouth maxi-vans, while Chevrolet, Ford, and GMC maxi-fleets are on the increase. Aerospace/SAMSO uses Dodge Royal Sportsman Maxi-Wagons with a 127-inch wheelbase equipped with a 360-cid engine, air conditioning, AM radio, power steering and brakes, automatic transmission, and aircraft-type reclining seats except for short-haul routes which get conventional bench seats.

A dealer initially talked Aerospace into leasing Dodge B-300 vans on a one-ton chassis based on projected passenger weight and heavier seats, but vanpool coordinator Leon Bush says "they rode like trucks" even after adding 400 pounds of sand as ballast. Softer-ride, ¾-ton, less expensive B-200 models have since been ordered.

Aerospace orders its van with two front bucket seats, then has the passenger area custom-refurbished with eight airline seats, carpeting, and sound-deadening materials for about $800 more. Its latest cost for a B-200, f.o.b. Los Angeles, was $8,738, including seats, etc., with ownership purchased at the end of a four-year lease for a few hundred dollars more.

An estimated resale value of $2300 reduces the vehicle's net cost to $6438 ($1609.50 per lease-year) plus $674 for insurance and $84 for a license for a total annual cost of $2367.50 or $197.29 per month. Operating costs per mile are 8¢ (5¢ for gasoline and a penny each for lube and minor maintenance, for tires, brakes, and batteries, and for miscellaneous) based on averages of eight passengers riding five days per week.

Aerospace buys its liability insurance commercially for $46 a month but has chosen to self-insure for risks of collision, fire, theft, and comprehensive. Each van was assessed $20 a month initially to build up a fund to cover such losses, but negligible losses have cut the assessment to $10.

Most Military Bases Still Carpooling. There are some outstanding carpool programs in the Armed Forces today, for example, Fort Benjamin Harrison, Ind., Tinker AFB, Okla., and the Navy Fleet Antisubmarine Warfare Training Center at San Diego, while some are just getting off the ground such as one at the Marine Corps' Camp Pendleton, Calif. But DRIVER found organized vanpools on most military bases are still in the dream or cocoon stage with a pair of notable exceptions.

The No. 1 stumbling block ironically has been a Federal statute (31 United States Code Section 638(a)(2) which specifically forbids the use of govern-

continued

"Easy Riders" might be the name for commuters currently utilizing a 70-vehicle fleet of leased luxury maxi-vans in downtown Los Angeles. All vans have airline-style seating, air conditioning, stereo headphones, individual reading lights, beverage holders, and are fully sound-proofed. Monthly fares range from $49 to $63, and anyone can sign up for the self-supporting, multi-company community vanpool.

Door-to-door service is offered on many commute-a-van routes, while others have prearranged pickup and destination points. Riders arrive for work fresh and relaxed.

commute-a-vanning's here!

continued

Reduced tolls is another economic advantage of ride-sharing in many communities. Rush-hour rates for car and vanpools crossing the San Diego-Coronado Bay Bridge in California, for example, are only 10 cents versus 60 cents for vehicles carrying fewer than three persons.

ment vehicles to transport government employees between their homes and places of work. The Public Service or Public Utilities Commissions in many states also have regulations on fares, schedules, and routes of vehicles for public hire which restrict or totally prevent the operation of cost-sharing vanpools.

A major break through the red tape jungle will occur early next month at Omaha, Neb., when Offutt AFB—Strategic Air Command headquarters—begins vanpool operations with three 15-passenger Plymouth Maxi-Wagons. The pilot project shows promise of becoming a model for nearly every military facility in the nation having an employee credit union. Here's how it works.

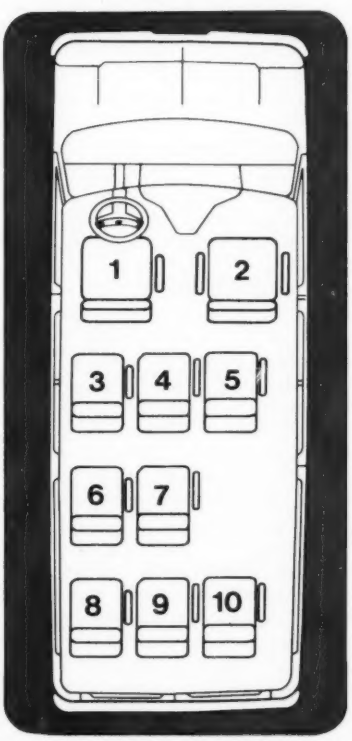
Last September, with the active cooperation and participation of the Offutt base commander's office, a special ad hoc committee was named to study vanpool possibilities as part of the base's energy saving program. Result has been formation of the Offutt Commuter Club, a private, nonprofit organization complete with constitution and bylaws, which will co-own and operate the vans with the Offutt Federal Credit Union as financier. Vanpool riders joining the club will share costs of its operations on a subscription basis.

The club is leasing its vans initially but in the future expects to purchase vehicles customized to best suit the comfort and desires of the riders, according to Offutt vanpool project officer Major Ed Marks. Operations will be within the framework of existing Federal and State laws on a breakeven basis, he said.

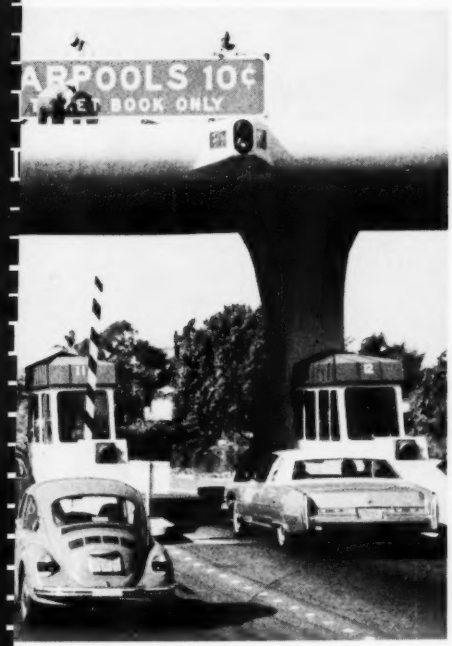
Low-Cost Fares Projected. Until the club can get some over-the-road experience, Major Marks reported fares will vary from approximately $26 per month for a 10-mile daily roundtrip to about $33 for a 25-mile roundtrip. Where possible, door-to-door service will be provided.

Primary riders will retain guaranteed seating during periods of leave or travel, while other club member-subscribers will be assigned to a standby casual list for rides whenever seats are available.

The Commuter Club is currently screening applicants for driver-co-



Comfort is the keyword for many commute-a-vans as illustrated by this floor plan for a spacious 10-seat maxi-van equipped with bucket seats forward and airline-style reclining seats aft.



ordinators who will be responsible for providing reliable, on-time service, arranging for routine maintenance, collecting fares, and maintaining basic financial and van-use records. In return they will commute free and have personal use of the vans on evenings and weekends for a small mileage fee. Backup drivers will receive similar benefits.

The vanpool drouth at DOD installations also is scheduled to end soon for over 50,000 military and civilian members who work at more than a dozen major Navy activities in the geographic jigsaw puzzle constituting the Hampton Roads-Tidewater area near Norfolk, Va. Permanently isolated by scores of waterways fingering into Chesapeake Bay, the nation's largest Naval complex long has been plagued by a necessarily circuitous road system and the lack of an economically feasible public transportation system.

Thanks to a Federal (UMTA) grant and state and local matching funds from five cities and agencies comprising the Tidewater Transportation District Commission, 50 Dodge PB-300 Royal Sportsman 12-passenger Maxi-Wagons have been purchased for use by Navy commuters in the area beginning in June. Vans will be leased to both military and civilian drivers who in turn, acting as independent businessmen or women, will receive assistance in obtaining riders from cooperating Navy commands which will maintain carpool matching lists.

If successful, according to the Fifth Naval District energy coordinator, Cmdr. Dean M. Finley of Naval Base Norfolk, more vans will be acquired and more vanpools established. Admitting that traffic density and problems in the area will continue to be massive, he said commute-a-vanning appears to represent the most effective step ever taken to reduce them.

Costs Are the Common Denominator. The advantages of vanpooling over other forms of transportation are thus becoming legion, but it took the highway Users Federation to put the economy angle into true perspective by estimating the costs, per person, for a typical 10-mile trip to work in a major metropolitan area:

- Driver-only autos, $3.71 per trip.
- Rail transit: $2.25 to $3.29.
- Carpools: $1.86 or less, depending on number of occupants.
- Conventional buses: $1.76.
- Eight-member vanpools: 54 cents.

As one avid military proponent of commute-a-vanning declared to DRIVER, "Any land-based DOD facility that hasn't investigated this revolutionary development in ride-sharing is missing the boat for both itself and its people. What's more, a good van program will help an organization perform its primary mission more effectively, regardless of what that mission is."

Happy vanning, sports fans!

EDITOR'S NOTE: DRIVER sincerely appreciates the cooperation and assistance in preparation of this article by Commuter-Computer offices in Los Angeles, San Bernardino, Riverside, and San Diego, Calif.; Aerospace Corp., Atlantic-Richfield Co.; 3-M Co.; Shell Oil Co.; California Department of Transportation (CALTRANS); U.S. Department of Transportation; Highway Users Federation; National Association of Van Pool Operators; *Business Week* Magazine; *San Diego Union;* Automobile Club of Southern California; Energy Coordination Office, HQ 5th Naval District, Naval Station Norfolk, VA; Office of the Commander, Offutt AFB, NE; Navy Fleet Anti-Submarine Warfare Training Center, San Diego, CA; Public Affairs Offices at Fort Benjamin Harrison, IN and Camp Pendleton, CA; and Capt Fred Duarte, USAF.

CAR AND VANPOOLS NEED NOT FAIL IF RULES ARE FOLLOWED

A lot of carpools and some vanpools break up because of personality problems rather than scheduling, according to the **Rush-Hour Book,** a newsy little pamphlet on ride-sharing distributed free by Shell Oil dealers. To head off such irritating or boring situations, Shell suggests some general guidelines that may not apply in every case but usually do work if established at the outset:

1. Do set up a schedule and be on time. Always. When you're late you make everyone late. If you can't be on time, let someone know in advance.

2. Do all you can to have enough gas in the vehicle for the round-trip. Most people resent stops and delays.

3. Don't smoke unless everyone smokes, or unless the non-smokers have agreed that it's okay.

4. Do vote on playing the radio. People's tastes in music differ. Some may not want it on at all. Be democratic.

5. Don't join a pool with people you sense you're not going to enjoy. In this instance, first impressions are a pretty good guide.

6. Do consider personal hygiene. "Kissing sweet" you don't have to be. But underdeodorized or overperfumed riders can send people reeling for fresh air.

7. Do make an effort to strive for harmony. Rugged individualism and carpooling don't make for particularly happy marriages.

8. Do be sure your vehicle is in peak condition. Make sure it's properly serviced regularly. If it conks out on the road, don't expect your passengers to laugh it off.

9. Most important, drive carefully. No drinks. No speeding. No aggressive driving or negligence. Other people's lives are in your hands.

TIPS FROM A VANPOOL JOCKEY

As the old race track cliche goes, "There's nothing like getting tips on winners straight from the horse's mouth!" So here are a few choice bets on van operations from a maxi-van jockey who obviously has circled the track more than once:

- To get passengers, advertise in daily bulletins, base/post/station ship newspapers, and on bulletin boards.
- Set house rules early . . . no smoking, payment method, rainy day schedule, etc.
- Keep people informed of schedule changes.
- Once the schedule is set, stick to it. Nobody likes to stand in the rain or cold in the early morning because you dragged your feet getting out of bed.
- Develop a telephone alert system for those times when the van won't start in the morning or you have tire trouble.
- Use convex safety mirrors for that hard-to-see blind right rear side of the van.
- Carry safety flares and an A-B-C rated fire extinguisher containing at least 2½ pounds of dry chemical. Teach your riders as well as other drivers how to use them.
- Allow for more than one backup driver and let them get periodic road experience.

Starting with six vehicles in 1973, the nation's first commute-a-van program at the 3-M Company in St. Paul, Minn., today numbers 92 vans on the road with more to come.

HANDLING EMERGENCIES

Sudden skidding. The need to brake hard or take quick evasive action. Off-road recovery. Sudden failure of parts or components. These are driving emergencies. If you drive defensively and maintain your car properly, your serious driving emergencies will be rare. But they can happen.

Probably the biggest factor in good driving is to pay attention to what you're doing. A lot of driving is routine stuff, so it's easy to get distracted. The good driver does not allow himself to lose his concentration. Many people speed up, then slow down quickly. They change lanes without looking in the mirror or glancing alongside. They don't plan ahead before making maneuvers. In other words, they become threats to themselves and everyone else without even knowing it.

One mark of a good driver is his ability to maintain a steady pace, particularly on freeways. You maintain a steady pace by driving ahead of yourself. Look everywhere, from your front bumper to as far ahead as you can see; constantly scan, using your peripheral vision, but be most concerned with what's going on in the block immediately in front of you because that's where you'll have to react if anything should happen. If something does happen ahead, steer away from the problem. That means you have to keep open space around you so that you have a chance to react when necessary. That open space may be more important than you know. Vary your speed or lane position to maintain it whenever you can.

One of the most effective maneuvers to prevent an accident is simply to back off the gas. Don't try to speed up, don't jam on the brakes – just back off. The car is easiest to control when it's coasting, with the engine slowing it down. When it's decelerating through engine compression, the tires have their best traction. If you jam on the brakes instead of decelerating, the wheels may lock and you can lose control. Similarly, you can lose control during acceleration, since it tends to deteriorate steering. *You can rarely accelerate out of a problem unless it's happening behind you.*

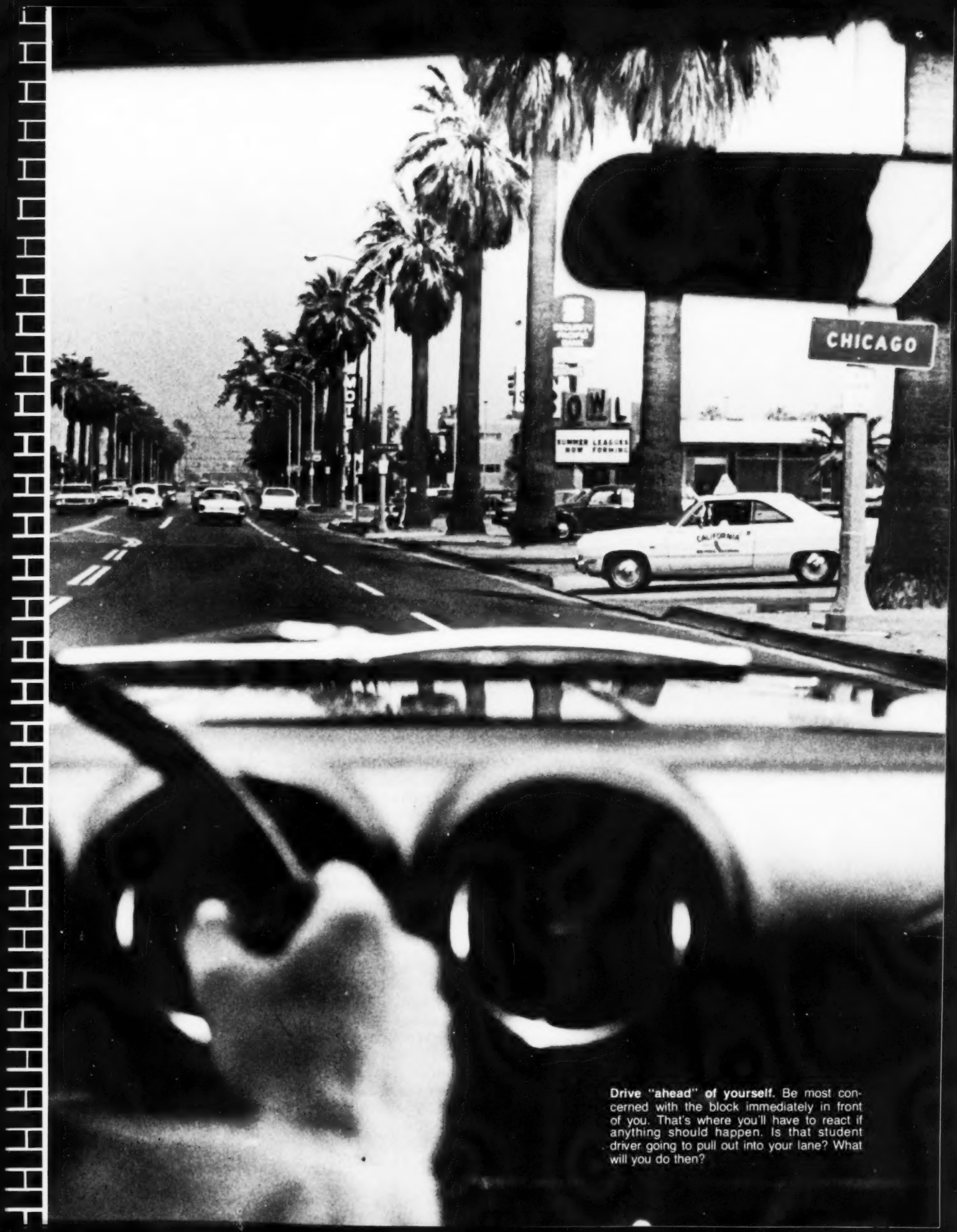
Avoid Troublemakers. Most of us learn early in our driving careers to avoid the weavers who are obviously under the influence of drugs and the high schoolers who are having a wrestling match in the front seat at freeway speed. But there are some other thoughtlessly dangerous types you want to move away from. One is the slow driver in the fast lane. He forces others to pass on the right – never a good idea and illegal in some states. Another is the false blinker, the driver who turned on his blinker 15 miles back and has forgotten about it. He can't be trusted. You just don't know what he's going to do. Incidentally, the false blinker may be hard of hearing (some indicators make a clicking sound) or daydreaming – another reason for keeping your distance.

There are some trouble makers you can't avoid. Race Driver Bobby Allison tells this story: "I consider myself an excellent driver, but even I have run into situations that I just couldn't handle. In my entire driving career, I've had just one serious accident. I had a brake failure in a tow truck, and to complicate matters, I was heading down a hill with a one-lane bridge at the bottom of a rural highway. A car was stopped at the bridge. When I blew my horn the guy thought I was being a smart aleck, so he held his brakes on. I did the hitting on that one and lost control of the situation, except for steering. I just tried to hit him as squarely as I could to keep from going into the abutments. Fortunately, neither one of us was killed."

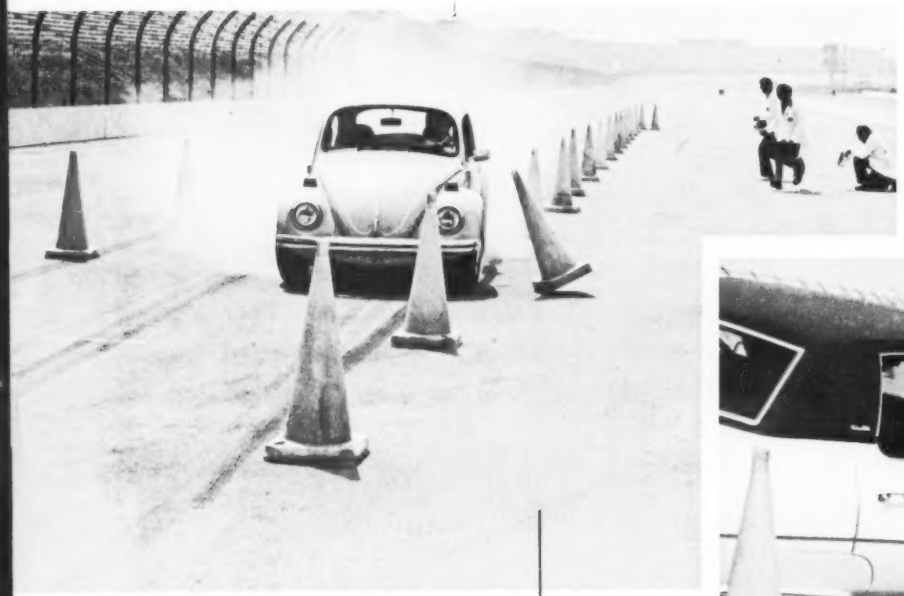
The truth is that in a crisis situation, the driver is severely limited in what he can do. Nevertheless, a little knowledge can be the difference between a scare and a disaster. Here are some facts that could give you that edge:

Skids. A skid might be referred to as any situation in which a driver is not in control. Defensive drivers avoid skids by exercising reasonable care suited to existing conditions, and by not overdriving those conditions. But skids are always a possibility.

continued



Drive "ahead" of yourself. Be most concerned with the block immediately in front of you. That's where you'll have to react if anything should happen. Is that student driver going to pull out into your lane? What will you do then?



Practice emergency braking. Learn to hit and release quickly and repeatedly or to apply strong pressure just short of lockup, to avoid a braking skid. If brakes are properly adjusted and the front end is in alignment, the car should not swerve during emergency braking, even on oily or wet surfaces.

(below and right)
Most drivers who have not had professional training simply aren't aware of the maneuverability of their cars. You have to steer quickly. Don't expect the car to drive itself. A violent maneuver like this will make you appreciate the seat belts—without them your body will slide from behind the wheel.

There are three types of skids: the *braking* skid (wheel lockup), the *cornering* skid (too much speed in a curve causing tires to lose traction with the road surface), and the *power* skid (too much throttle in a turn or curve causing wheels to spin and no longer provide cornering traction).

In a *braking* skid where the wheels are locked the objective is to release just enough pressure on the brakes to get all four wheels rolling again. This restores steering control (sliding wheels offer no cornering traction). The trick is to modulate the brakes in hard-stop situations by applying them just short of lockup. As long as the wheels are rolling, you will have steering control.

A *cornering* skid and *power* skid are best handled by getting your foot off the accelerator pedal. If it becomes a skid where the rear of the car starts to come around to where the front should be (as might happen when you turn a corner on a wet or icy road), take your foot off the accelerator pedal as soon as you feel the rear end start to slide and quickly steer in the direction that the rear is sliding – in other words, steer into the skid. For example, if the rear end is skidding to the right, steer to the right. If you start steering into a skid quickly enough the car will straighten out. As it does you should straighten the front wheels, otherwise it is likely that the car will start a counter skid in the opposite direction (you have over-corrected in steering).

If a counter skid does occur, you merely counter correct and steer into the direction of the second skid. Counter skids can occur three or four times if the driver does not catch it at just the right time, that is, straighten the front wheels as the back of the car returns to a straight line.

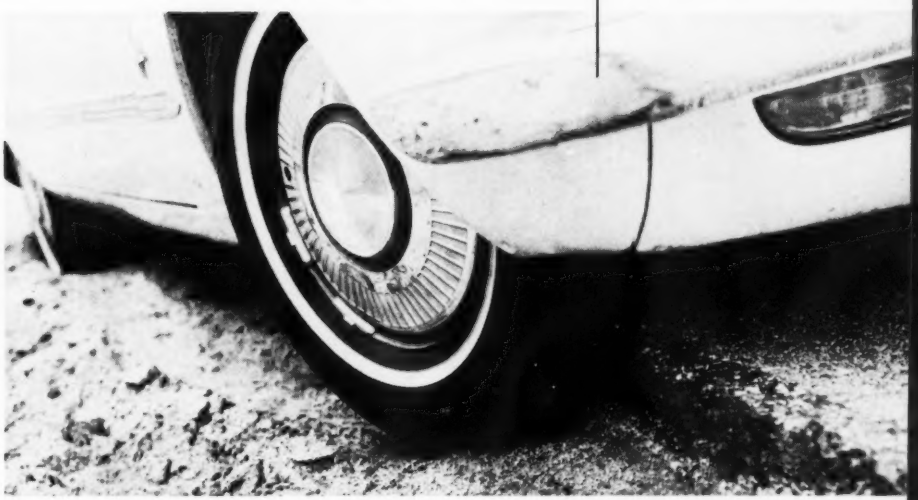
Try to remain calm with the attitude that you can get out of it, because you can. Make your movements smooth, not quick and jerky. Keep the car in gear. You'll have greater control. All of this advice applies to cars which are engine-braked at the rear wheels.

FWD Is Different. These days a lot of us are driving front-wheel drive (FWD) vehicles such as Olds Toronado, Cadillac Eldorado, Hondas, many Volkswagens, Audi, Saab, Fiat 128. These FWD cars call for different skid procedures because they are engine-braked at the front. This action causes the front of the car to slow down, while the rear end maintains its speed and "outruns" the front, causing spinouts.

The correction for a FWD slide is this: don't decelerate. The best thing to do, if there is time and room, is to speed up slightly while turning the wheel in the direction of the slide. The

continued

(below)
The right wheels are off the pavement and scrubbing the edge. The wrong corrective action can send your car speeding into on-coming traffic in the other lane. Delay recovery and you may crash into a tree or utility pole.



next best thing to do – but far less effective – is to dump the clutch in, or take the transmission out of gear. While it won't get the front end going faster than the rear, it won't make it slow down any more, either. This second option is to be considered with caution because of the possibility that "Reverse," "Park" or "Low" could accidentally be found while groping for "Neutral."

Evasive Maneuvering. One of the most important lessons taught at any driving school is: "Hang in there and steer your way out of trouble!" Steering ability can be more important than braking ability in some situations: Cresting a hill and finding a car stopped in your lane. A child darting out from between parked cars and stopping right in front of you. Another vehicle suddenly "pulling out from nowhere."

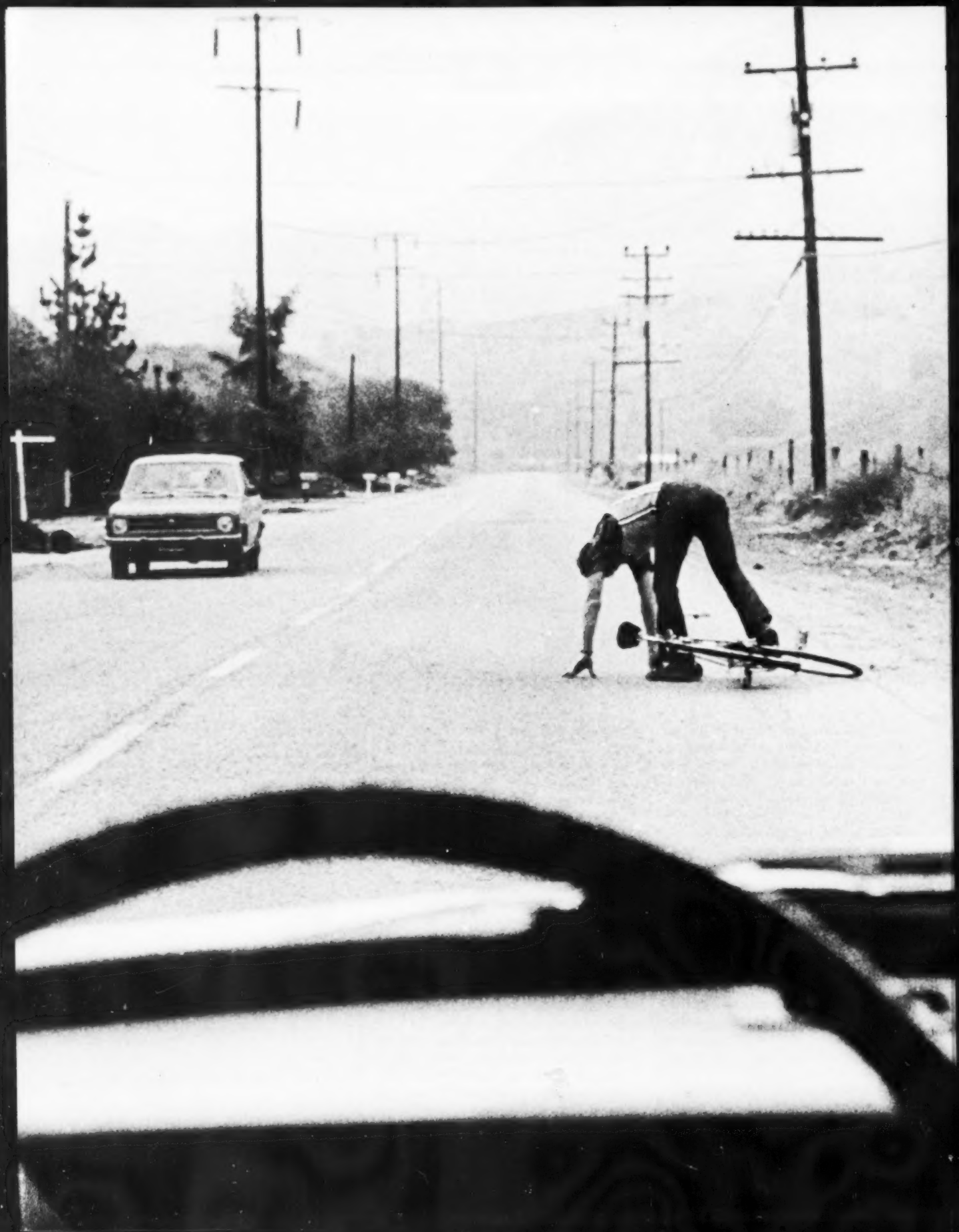
These emergencies can be handled by stopping – *if* you can stop in time. But often you cannot. There isn't room. Severe braking can cause you to slide right into the very object you are trying to avoid, because you have no steering control. It's a time for evasive action.

Most drivers who have not had special training simply aren't aware of the maneuverability of their cars in such situations. First you should apply brakes – but just short of wheel lock-up. It's better to remove as much speed as you can from a possible collision. Then, *steer around* the object. It requires close attention and an instant decision. A quick reaction is vital. If you are holding the steering wheel at the recommended 9 and 3 o'clock (or 10 and 2 o'clock) positions you can turn it a full 180 degrees very quickly without removing either hand. You must act fast, steer quickly, and just as quickly straighten the wheel once you have gone around the object.

continued

COMMUTE-A-VANNING PHOTO CREDITS

DRIVER gratefully acknowledges the following photographic contributions to our lead article: Front cover, *San Diego Union* by Rick McCarthy; inside front cover, pages 1 & 3, and columns 1 & 2, page 4, Capt Fred Duarte, USAF; column 3, page 4, RM3 Terry L. Davenport, USN; toll bridge photo, pages 6 & 7, *San Diego Union* by Don Tichonchuk; also Commuter-Computer of Los Angeles & San Diego; Atlantic-Richfield Co., 3-M Co., and Aerospace Corp.



Depending on speed, this can be a rather violent maneuver for the driver who is not prepared. This is one of the reasons driving experts recommend that you *always* drive with your seat belts fastened and with both hands on the wheel.

Off-Road Recovery. It's not unusual at one time or another to drop the right wheels off the edge of a road onto the shoulder. Sometimes this edge may be three or four inches in height. Problems can develop while you're trying to get the wheels back on the road. If you try to steer back immediately, you may end up scrubbing the tires along the edge. So you put more input into the steering wheel to try to overcome the scrubbing. Too much input and the front wheel climbs the edge suddenly. But by this time there is so much steering angle that the car may leap clear across the lane into oncoming traffic. Correction for this sudden and violent movement can cause the car to spin out.

The best thing to do if the right wheels have dropped off the edge is to slow down and get all the way off the road. Check the traffic behind, then steer firmly back onto the right lane from a low speed, straighten the car, and accelerate.

If you're moving at highway speeds when you drop your wheels, however, and there is an obstruction on the shoulder ahead – a tree, parked car, or bridge abutment – and you are too close to stop, you must regain the pavement immediately with little or no reduction in speed. A recommended procedure is to steer to the right until the wheels straddle the road edge. In other words, the car is about half on and half off the road. Then, steer sharply toward the road and the moment you feel the front tire hit the edge, straighten the steering wheel. The momentum will carry the car back onto the road surface, and because you straightened the front wheel immediately the car should stay in the right lane.

Failure of Parts or Components. Good maintenance will prevent most mechanical failures on the road. "Red-light problems" – oil pressure, engine temperature, alternator/generator – may mean your car and your pocketbook are in danger but they don't represent an immediately safety crisis. Stop as soon as you possibly can do so.

Loss of power-assisted braking and steering can cause momentary panic to the driver who doesn't know much about the mechanics of the car. Just remember that if the steering is suddenly more difficult or the brakes will not respond when you touch the brake pedal, you *can* still steer and brake. It takes more effort but it can be done.

A blowout is rare today for anyone who takes proper care of his tires. But if you do have a flat tire or a blowout on the highway, get a firm grip on the wheel and apply your brakes gently to slow down. Pull off the road where it's safe to do so. Don't slam on the brakes.

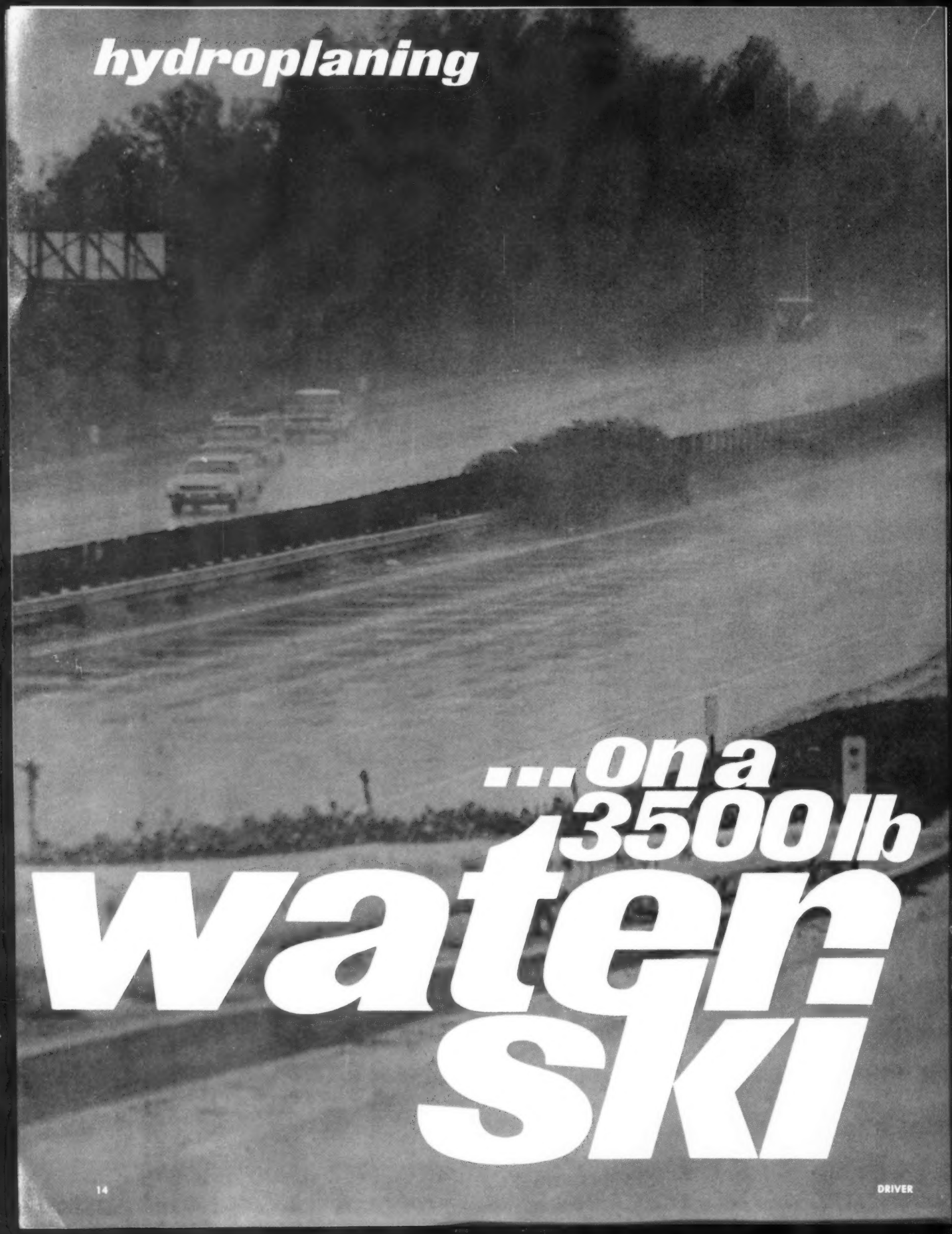
A blowout will be sudden. You'll feel it in the wheel and you may hear it. You may also feel a part of the car dip. Control may be difficult, but it will be possible.

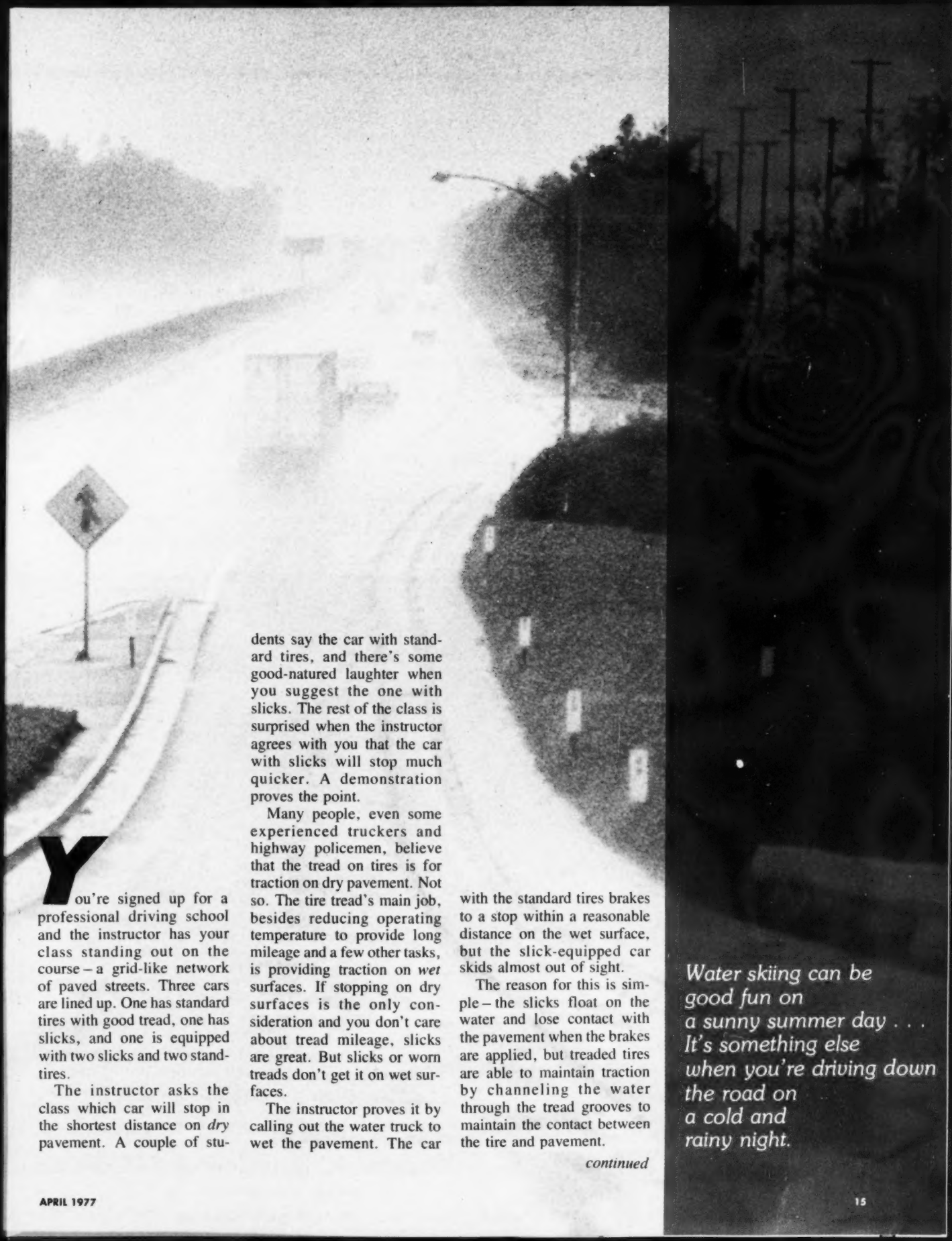
Collision! Even the best of drivers may some day be involved in a collision. If you are in a collision and if your car is still moving, you still have to drive it. The average driver quits driving as soon as he hits something. The car careens on, running over or through everything in its path, until its energy is exhausted. The after-collision can be as destructive as the collision itself. So you have to keep on driving the car until it stops – no matter how badly it's damaged. If you can control it at all, you are obligated to do so.

The time to prepare for a highway emergency is right now, relaxed and with a few minutes to think. You know your car and how it handles. You know yourself and your driving capabilities. Reflect on the emergencies we have been talking about. How well would you handle them?

(Note: Professional driving instructors vary somewhat in their methods of teaching driving techniques and handling emergency situations. DRIVER relies chiefly on the methods advocated by the National Highway Traffic Safety Administration (NHTSA) and General Motors.)

(left)
Here is a place for a quick decision. Can you brake to a stop in time to save the fallen bicycle rider, or must you steer around him?


hydroplaning
...on a
3500lb
water
ski



You're signed up for a professional driving school and the instructor has your class standing out on the course – a grid-like network of paved streets. Three cars are lined up. One has standard tires with good tread, one has slicks, and one is equipped with two slicks and two studded tires.

The instructor asks the class which car will stop in the shortest distance on *dry* pavement. A couple of students say the car with standard tires, and there's some good-natured laughter when you suggest the one with slicks. The rest of the class is surprised when the instructor agrees with you that the car with slicks will stop much quicker. A demonstration proves the point.

Many people, even some experienced truckers and highway policemen, believe that the tread on tires is for traction on dry pavement. Not so. The tire tread's main job, besides reducing operating temperature to provide long mileage and a few other tasks, is providing traction on *wet* surfaces. If stopping on dry surfaces is the only consideration and you don't care about tread mileage, slicks are great. But slicks or worn treads don't get it on wet surfaces.

The instructor proves it by calling out the water truck to wet the pavement. The car with the standard tires brakes to a stop within a reasonable distance on the wet surface, but the slick-equipped car skids almost out of sight.

The reason for this is simple – the slicks float on the water and lose contact with the pavement when the brakes are applied, but treaded tires are able to maintain traction by channeling the water through the tread grooves to maintain the contact between the tire and pavement.

continued

Water skiing can be good fun on a sunny summer day . . . It's something else when you're driving down the road on a cold and rainy night.

hydroplaning

continued

Most people know that hitting the brakes on wet pavement can instantly turn their car into a giant water ski. Also that the balder the tire the better it skis. But unless you have thrilled to an experience known as aquaplaning, or more commonly hydroplaning, you may not know that you can lose control of your car when just cruising down a straight stretch of road.

So with springtime showering down on us, it's a good idea to learn a bit about the potentially dangerous form of automotive water sport known as hydroplaning.

What Is Dynamic Hydroplaning? When a car moves along a wet roadway, water penetrates between the tires and the pavement, causing water pressure which can raise a portion of the tire off the pavement. The pressure increases with increased vehicle speed and supports more and more of the tire. At a critical speed (called the hydroplaning speed), the tire is completely supported by the water and is actually floating. When this happens, the driver loses all control until the car slows to below the hydroplaning speed and the tires again make contact with the pavement.

But knowing *what* happens isn't nearly enough. To stay out of trouble on wet roads, you've got to know *when* it can happen.

Hydroplaning occurs when the tire inflation pressure, speed of the car, water depth on the road, condition of the tire tread *are combined in such fashion* that the tire loses contact with the road. Let's consider each of these factors in more detail.

Speed and Tire Pressure. Presuming for the moment that enough water is present for hydroplaning, the speed at which a tire will hydroplane may be predicted solely on the basis of tire inflation pressure. Here's why. Because the tire is flexible and deforms under changing loads, the ratio of weight carried by the tire to the area of tire contact on the pavement remains about the same. And this ratio of weight to area will always be very near the tire inflation pressure.

To learn the speed at which the tires on your car are likely to rise above the wet pavement you need the help of a tire gauge and a square root table. Simply find the square root of the tire pressure figure and multiply this square root by 10.35. For example, given 36 psi, we have the following: $10.35 \times \sqrt{36} = 10.35 \times 6 = 62.1$ mph. Using the same method of computation, a tire pressure of 16 psi gives a hydroplaning speed of 41.4 mph; 24 psi, 50.7 mph; 32 psi, 58.5 mph.

The above speeds are examples of those at which total hydroplaning occurs – with total loss of the traction needed for steering and braking. But some loss of traction, due to partial support of the tires by water, may occur well below hydroplaning speeds. This "partial hydroplaning" is the more common happening and is every bit as dangerous as the total variety.

Water Depth, Road Surface, and Tires. What about the other factors? As we already mentioned, the equation used above presumes there's enough water present for tires to start acting like water skis. The actual water depth needed in a particular situation depends upon the size and number of channels present to allow the escape of water from beneath the tire and delay build-up of water pressure. These "escape channels" may be provided by the pavement surface (through unevenness or grooves) or by good tires. The bit about the pavement surface is simple enough, but what are "good" tires? Here's how you can rate your car's tires. (Maximum number of points is three.)

Give your tires "one" if they have nice, deep grooves. Tires with deep grooves fare pretty well on wet roads.

(below)
Is there enough water here for hydroplaning? Yes, provided tire inflation pressure and speed of the car are also contributing to the phenomenon. Partial hydroplaning—due to partial support of the tires by water—is just as dangerous as the total variety.

Hitting the brakes on wet pavement can be a thrilling experience. But if conditions are right, you can lose control of your car just cruising down a straight stretch of wet road.

But even these tires will hydroplane at the predicted speeds when the water depth exceeds the groove depth.

Add another "one" if your tires have an open (wide groove) tread design that provides quick escape routes for the bulk of the water that builds up immediately ahead of the rolling tire.

Now we're getting closer to our "good" tire.

Jot down another "one" if you're using radial or belted bias-ply tires. Thanks to stiffer tread belts, these tires permit little distortion of the tread area while the tire turns. Consequently, the grooves stay open to allow the water to pass through them.

Now you should have a pretty good idea of what constitutes a "good" wet-road tire. If your tires deserve the maximum rating of "three," you shouldn't have too many problems – if you slow to a reasonable speed and don't run into too much water.

The lower the rating, the slower and more cautiously you'll have to drive your car when the sky opens up. Of course, badly worn tires don't perform well under any conditions. Since smooth or badly worn tires will hydroplane when there is less than .04 inch of water on a smooth surface, we wouldn't be exaggerating too much if we said drivers using such tires are in danger if some inconsiderate person up ahead spits on the pavement.

A word of caution if you are driving "low-profile" tires. There are a lot of good reasons for the recent trend toward these tires. Essentially, a lower, wider tire lowers the car's center of gravity and puts more rubber on the road for safer, surer handling under nearly all conditions. But remember that more rubber on a wet road can mean the tire will more readily get up

continued

The actual water depth needed to induce hydroplaning in a particular situation depends to a great extent on the tire tread. The tread provides channels for the water to escape from under the tire. Water in a dip like this is deep enough to act as an effective brake. Hitting such a puddle with only one wheel can cause a spin-out.

hydroplaning

continued

on top of the water – the "water ski" is bigger. So if you're using these tires, pump them up to maximum recommended inflation to increase the hydroplaning speed, and slow down on wet roads.

Viscous Hydroplaning. Until now, we've been discussing dynamic hydroplaning, a major problem on the highways. But what about all those unfortunate drivers who stack up their cars on wet city streets? The cause is still hydroplaning, but this time it's *viscous* hydroplaning – or, if you prefer, viscous skidding.

Consider a road untouched by rain for many months. The first few drops of water combine with the already present dirt, dust, oil and grease to form a gooey paste slicker than the proverbial greased pig. Extended rains will wash much of the muck off the pavement; but, during the beginning of the shower, watch out! Also, bear in mind that even after the goop has been washed away, wet pavement is slicker than dry pavement and wet rubber provides less traction than dry rubber.

Remember this: viscous hydroplaning is much more common than dynamic hydroplaning, and it can occur *without* rain. A little dew from the damp night air acts as a very effective substitute. Think about this next time you're out in the wee hours.

Avoiding Hydroplaning. Here are a few ways to avoid "auto" skiing:

■ Throw out the anchor when the roads are wet. This is especially important when conditions are ripe for viscous hydroplaning. Just how much you should slow down is something you'll have to decide based on the variables we've been discussing.

■ Watch for standing water or puddles – especially on curves. When you can see patches of water or the water is deep enough to cover pavement unevenness, assume there is enough H_2O for hydroplaning.

■ Corner carefully and don't make any abrupt movements of the steering wheel. Be a smooth driver.

■ Be alert for "loose" steering (more difficult to detect with power steering which reduces the driver's ability to "feel" the road). If the steering wheel begins to feel loose, your tires are starting to hydroplane. Best bet then is to gradually get off the accelerator and stay away from the brakes. Braking during partial or total hydroplaning makes things worse quickly.

■ Increase tire pressures for wet-road driving. For every additional psi, minimum hydroplaning speed is increased by roughly one mph. But don't go over the recommended maximum pressures.

■ Know the condition/design of your tires and drive accordingly.

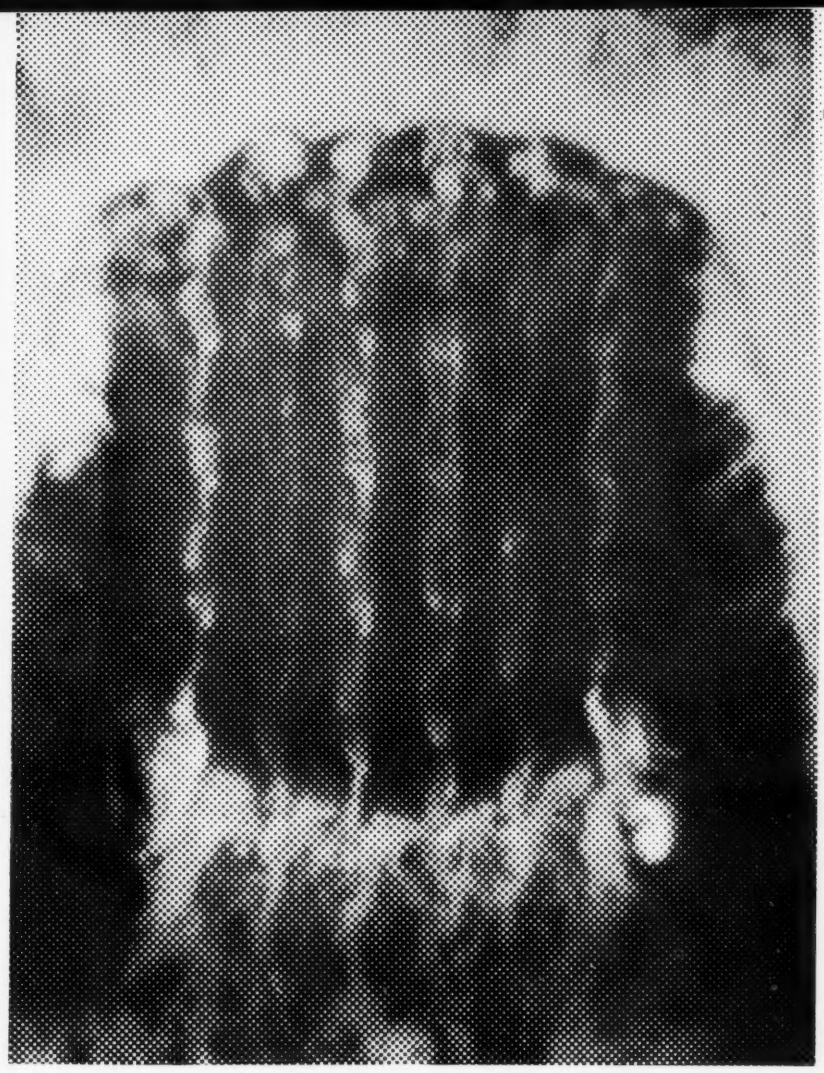
■ Follow in the tracks of the car ahead of you. Its tires are clearing away the water.

■ Stay alert for cross-winds and uncrowned roads.

■ Increase the gap between your car and those ahead to give yourself more time and distance to stop or control your car.

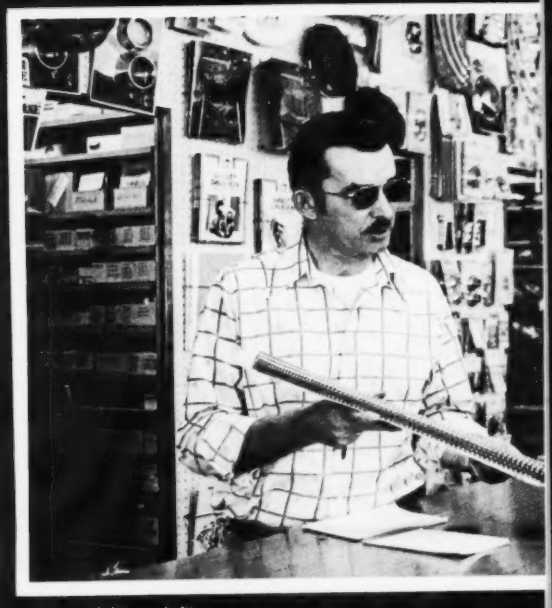
■ Test the brake action occasionally to check traction on different surfaces and under different conditions.

■ Try to match up your tires so that those with similar tread groove depth are on the same axle. If you're going to hydroplane, you may as well do it straight ahead.



(left)
Tire at left funnels out the water through its deep grooves, leaving the rubber in contact with the surface. Worn tire, right, isn't grooved enough to channel out water, is virtually skimming on top of a film of water. That's hydroplaning. (Photos from Tire Industry Safety Council shot at 1/9000th of a second as car passed over a glass plate at 50 mph.)

(below)
Heavy rain leaves lots of problems behind: debris on the pavement and standing water is to be expected, but does the VW driver know the roadbed beneath this pavement has been washed away?



(top)
Once you've decided on the type of cycle you want, begin to make the rounds of the dealers. Pick a dealer that has a good reputation, a good repair facility, and plenty of bikes in stock.

(above, left)
If you see something you don't understand, ask about it. Make the salesman show you the safety features as well as the creature comforts.

Cheapie or chopper, new or nostalgic, racer or stocker . . . it's your choice

buying a motorcycle

So you've decided to do it, have you? You've convinced yourself that a motorcycle seems to offer the best transportation value in terms of purchase price, mileage, "repairability," and resale value. You even admit that there might just be a little "fun" involved with motorcycling, too, and having a vehicle that's fun is just as good a reason for buying a bike.

(above, right)
Check out the dealer's parts stock. You want to be sure that if your bike breaks, the dealer stocks the parts needed to fix it.

First Things First. After you've made the initial decision to buy your first motorcycle, the thing to do is make up a checklist outlining what you want in a bike, right . . . ? Well, not exactly.

We think there's an important step to be accomplished even before you make out that checklist. This first step should be *rider education*.

Basic rider education has several benefits. One: You get to learn to ride on somebody else's motorcycle . . . if you're gonna put scratches on a new motorcycle, why not put them on a machine that was designed for it? Two: when you show up at a motorcycle dealership and ask to test-ride the new $4,000 Yamasaki-Harleyson, the dealer may be a bit reluctant to let you take one out if you don't know how to ride. Three: the worst time to learn to ride is on your way home from the dealer's lot after picking up your new bike. We injure a lot of service people with that method of rider education.

Both Kawasaki and the Motorcycle Safety Foundation offer excellent learn-to-ride courses that are reasonably priced. The learn-to-ride courses are super, even for a person who used to ride but hasn't in the last five years. These courses are usually available in most good-sized communities, but Base Motorcycle Clubs may have one or the other of the courses, too.

OK, now that you've taken an approved rider education course, move on to that pre-purchase checklist.

What Do I Want? Even if you don't know much about motorcycles *per se*, you still have an idea about what you want. You may want a small bike exclusively for commuting from the housing area to work, or perhaps you'll occasionally want to cruise down to the beach.

Some of us want a bike that will do double duty as a work/play machine. Use it to go to work Monday through Friday and then head off into the boonies on Saturday.

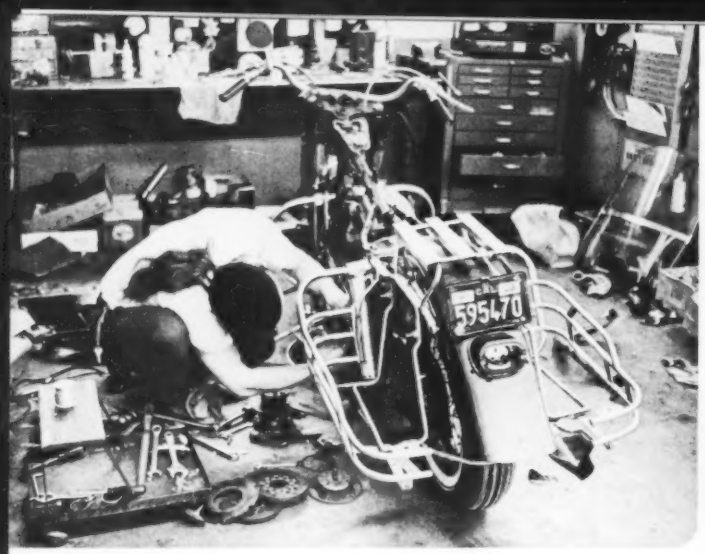
Others will want a real road machine, one capable of eating great stretches of highway in a single day.

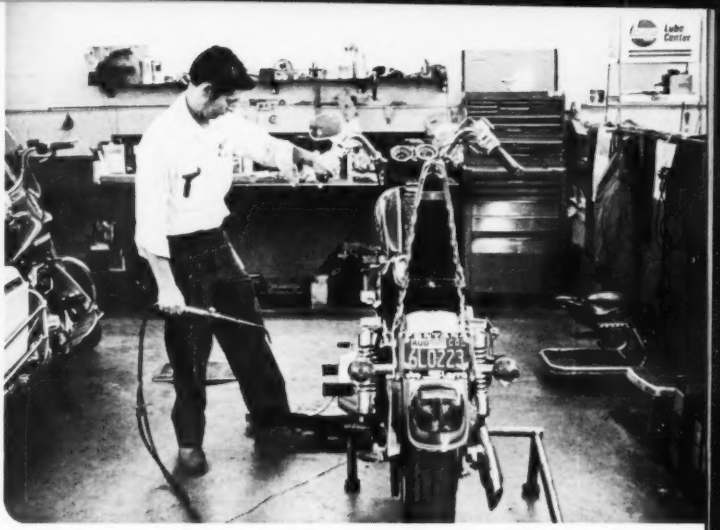
Whatever the type of machine you want, be sure to define your motorcycling objectives before you begin touring the dealers. You can save yourself time and money by not going to a BMW dealer, for instance, if you know you want a dirt bike.

As you make your decision about the type of bike you want, consider the following hints . . . they may save you some money and/or grief:

■ Unless you are 100% positive that you will use the bike only for commuting, stay away from the small displacement models (under 200 cc's). Many people buy a tiddler for commuting and then get really turned-on to motorcycling. Then they have to go

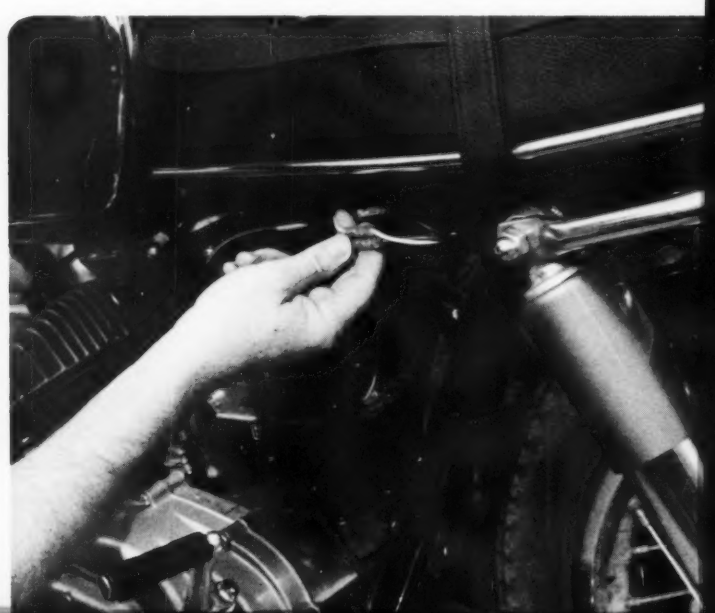
continued





A look at the repair portions of two dealerships. Which one would you let work on your bike? A sloppy work area *can* mean a sloppy mechanic or a bum dealer.

(left:) **Don't let** a quick-talking salesman sell you something that you don't want. Reputable dealers don't use high-pressure tactics or come-ons to induce you to buy. (right:) **If you're buying** a used bike, check out its appearance. If it *looks* like it has been abused, it probably has.



continued

out and buy a bigger bike that will satisfy their desires. We would recommend a bike of at least 250 cc's displacement.

■ If you think you'll be doing some touring or long-distance work, opt for a 650 or larger. If you want to ride two-up, go with a 750. These bikes have the horsepower and carrying capacity necessary for safe touring. Don't be put off because a 750 may seem too "big and fast." Remember, a bike will go only as fast as you open the throttle, so don't let those big engines scare you away.

■ Dirt/street compromise bikes are exactly that . . . a compromise. They don't excell at either dirt OR street riding. They are suitable for short commutes to work, or play riding in the boonies. If you will be riding exclusively in the dirt, get a dirt bike.

■ Buying a used chopper is not a good move. If you want to go the chopper route, buy a stocker and then modify it. You not only get to choose what options and colors *you* want, but you get to control the quality of the reconstruction. When you buy a used chopper, you can't be sure what construction techniques were used.

■ Purchasing a used race bike *can* be a good deal because they are usually constructed with great care and attention to detail. Also, they probably have heavy-duty parts already installed, and usually are maintained by expert mechanics. You have to be careful in the selection of a used race bike, but remember that "never beaten" is a lot better than "never raced."

The New Bike. You can be fairly sure of the mechanical integrity of a new bike, so that makes the purchase of a new bike a good idea if you can afford it.

According to Robert W. Peters, sales manager of Dale's Modern Cycle in San Bernardino, Calif., the most important thing to consider when buying a new bike is the dealer from whom you will purchase. Just because a dealership has been in business only a few years doesn't mean it's not a good one, but you'll probably be better off going to a long-established dealer who has a good reputation with local motorcyclists.

While you're at the dealer, check out his parts department and his repair facilities. Does he carry a good stock of spare parts or does he just have dress-up items? Is his repair shop overflowing with bikes awaiting parts, or is it busy with machines being worked on?

Does the dealer have a good selection of machines displayed or does he have two or three and will "order you anything you want"?

A dark, dirty shop doesn't necessarily mean the dealer is a bum, but it *may* indicate how he feels about his customers.

Dealers who sell more than one make of motorcycle may give you a better chance to compare those particular makes, and may even be able to give you a better "deal" on one make to keep his stock balanced.

Will dealers deal? *Most* of them will, if your timing is right. One of the best times to make a deal is about two months after new model introduction. Last year's models may have a substantial discount at this time. You may also have good luck at the end of the month. Some dealers establish quotas for sales, and dealers may move units at lower cost if they are near the end of the month but still haven't met their quota.

You can get single-point financing and insurance at many dealers. You walk in, make your best deal, give the man your downpayment (around 15%) and he arranges financing and insurance on the spot. It's quite convenient, but remember that you might get a better deal on both interest charges and insurance by shopping around.

One last thing to check out . . . bikes are sometimes cheaper in major cities than in rural areas. Large dealers in cities can sell cheaper because of volume, and smaller dealers in rural areas must often pay extra freight charges because of their distance from rail heads. Of course, you, the customer, will pay those extra charges.

Buying A Used Bike. Used equipment can be a tricky proposition, in more ways than the "pig in a poke" syndrome. It is harder to get financing on used bikes, and the needed downpayment is usually larger (percentage-wise) than for a new machine. Insurance should be cheaper, though, and of course total cost will be lower than for new machinery.

If you'll follow a few simple guidelines, you can be assured of making the best choice. The following tips apply to most bikes . . . two-stroke, four-stroke, dirt or street.

It helps to have a friend who knows cycles, but even if you're not mechanically minded, you can get a *fair* idea of the condition of a bike just by looking at it. Generally, a person who keeps his machine lookin' sharp will take care of its mechanical needs as well. But if the critter looks like it's gone through a lot, if the paint is chipped or there's oil everywhere but on the chain, forget it. The general rule is: if it looks like it has been abused, it has!

The heart of the bike, and the part that costs the most to replace, is the engine. Check the engine and transmission out first . . . if you find problems here, don't even bother checking out the rest of the machine, just move along.

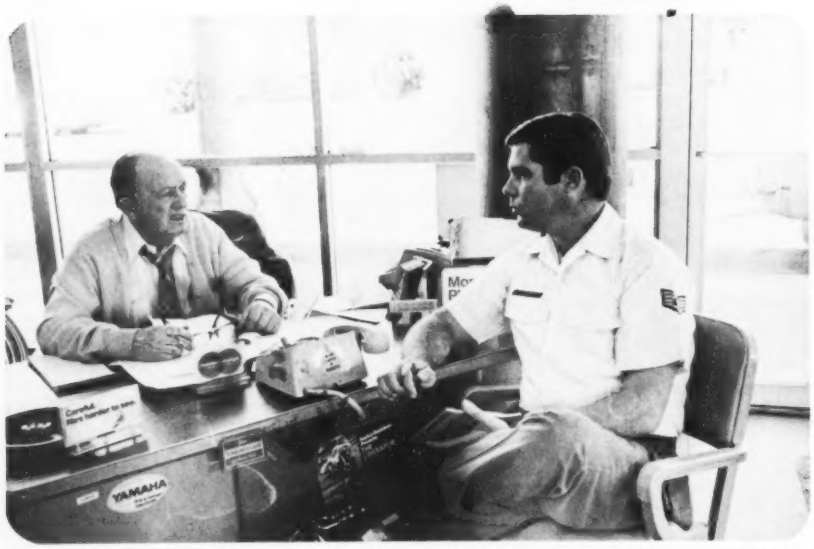
Unfortunately, you can't really "see" inside an engine, but you can hear it and feel it running. Be skeptical about unusual noises. Don't let the owner tell you "but all Yamasakis make that

continued

(far left)
Before your test ride, check the condition of cables and controls, and test brakes and clutch for adjustment.

(near left)
Electrics can be a major source of trouble on a used bike. Check the condition of the battery as well as lights, connections, horns, etc.

continued



If the bike checks out OK, then try to make your best deal with the seller. Remember that dealerships aren't always the best place to get financing and insurance. You may be better off by shopping around for these items.

noise." Nine times out of ten, if the noise is unusual enough for you to notice it, it shouldn't be there.

Excessive vibration is often a sign that a main or rod bearing could be going out to lunch, or that the crankshaft is out of balance.

Take a piston compression check on a four-stroke or a crankcase compression check on a two-stroke, and compare the readings against factory specs. More than 10% difference between specs and actual readings may indicate trouble.

Blue smoke coming from the exhaust of a four-stroke may mean a broken piston ring or blown head gasket. Check for oil leaks around the tachometer drive attach point . . . a leak indicates the owner doesn't care enough to fix the "small stuff" and that attitude could carry over to the big stuff as well.

Test Ride Helps. Make sure you know the locations of all controls and check clutch and brake adjustment. Then, if possible, take the bike for at least a 10-mile road test. Certain engine and transmission problems may not show up until the bike is thoroughly warmed up. If there are oil leaks, they'll show up then, too.

During the road test, pay particular attention to the transmission. It should shift smoothly and easily through the gears. If shifting is hard, if the trans mis-shifts, or if the transmission jumps out of gear, you have problems.

Down-shifting is a good check on clutch condition. Clutch release and engagement pressure should not be excessive, although this could be caused by an improperly lubricated clutch cable.

A thorough road test will tell you a lot about the suspension, too. Ride down a rough stretch of road. If the forks and shocks bottom out easily, or seem too stiff, they're in poor condition. If any part of the suspension (particularly the swing arm and steering head bearings) is faulty, the bike may wobble or feel unstable. Incorrect tire pressure can cause this, too, so don't forget to check on that possibility.

Find a straight back road with little traffic, and then test the brakes. Accelerate to 30 mph, then brake gradually with both brakes. Next, try it at 50 mph. Do this several times, braking harder each time. If the brakes fade severely, causing you to use much more lever effort each time, the linings are probably glazed and need replacing. Disc-brake-equipped bikes should be put through the same tests. Fade here indicates that the pucks are about gone or that the brake rotor needs resurfacing.

After the road test, put the bike on its center stand so that one wheel at a time can be spun freely. Spin each to see if the rim is truly round, and look for side wobble.

Grab each wheel and push-pull on that turkey. If you get any deflection, the wheel bearings are bad or the spokes are loose.

Oil leaking from forks or shocks indicates that the seals are bad. Fork seals can be replaced but OEM (original equipment) shocks are not usually rebuildable.

Check the sprockets and chain (unless you're looking at a BMW or GL 1000). Teeth on good sprockets are symetrically shaped. Pointed, thin teeth and those with the tops broken off mean the sprocket needs replacing. Pull the chain away from the backside of the sprocket. If it moves more than half the length of a tooth, (about ¼ of an inch) it's stretched and'll have to be replaced. NOTE . . . make this check, and any involving the rear wheel, WITH THE ENGINE OFF!

Next, check out the electrical system. If the bike has a battery, disconnect the leads (ground lead first) and take the battery out of its holder for a close look. Most cycle batteries have clear cases, and you can easily check for correct electrolyte level. If the fluid is cloudy or has crystalline formations, the battery has gone "toes up." As a rule, bike batteries seldom last more than two years.

Try the horn and check the lights, along with any other accessory items.

Don't forget the obvious. A torn seat, worn tires, etc., will cost you money later.

Should the person selling the bike refuse to let you make these checks, politely tell him to stuff it in his hat, and then move on. The seller's probably got something to hide. You deserve to know what you're getting. After all, it's your money . . . and your hide, too, if the bike fails at the wrong time.

If you've checked it out, and it looks good, arrange to meet the seller at the DMV or Registry. Then, together, you can get the correct paper work all done and assure yourself that the title, etc., is in order.

Once properly registered and insured, you're free to go out and ride your new pride and joy. Whether you purchase a tiddler or a monster-bike, you'll be a motorcyclist . . . and welcome to the ranks!

SAFETY TOPICS

Return of the Muscle Car?

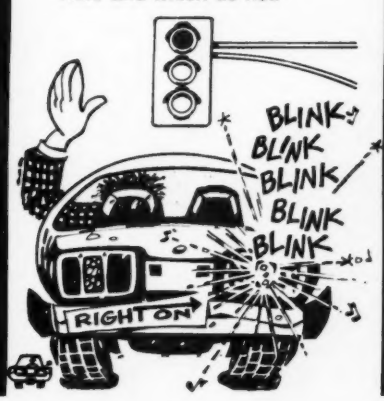
The Camaro Z-28, gone from showrooms for two years, has come back as a production model. Chevrolet says it's intended for the macho enthusiast but we think women can buy it anyway. Standard engine is the 350-cubic-inch V-8 with a four-barrel carburetor. Four-speed Borg-Warner heavy-duty transmission is standard with an automatic optional.

Right On Red

Two more states have adopted the "Western Rule" version of permitting right turns on red lights. In Wyoming the law was effective with passage on 15 February. In South Carolina the legislation takes effect 15 May.

There are now 45 states permitting the Western Rule. The remaining five states observe the Eastern Rule which permits right turns on red lights only where a sign is posted allowing such turns. The District of Columbia and New York City have no provision for right turns on red.

The Western Rule has gained favor recently because it reduces fuel consumption, auto emissions, and traffic delays at intersections. National adoption would eliminate driver confusion over which states observe the Western Rule and which do not.



Wanted

A razor-sharp technical editor who has practical experience in automotive and motorcycle maintenance, riding and driving. Must be a good writer with some interest in photography. AFSC ground safety technician, information, transportation, or you tell us.

If interested send resume with samples of writing. Include your Autovon phone number, AFSC and present job title. Position available in July. Air Force E-6 and below only.

continued from page 2

Double Clutch

television sets, and aircraft instruments as examples. John Call of Chrysler notes that electronic systems already are competitively priced with traditional hardware and that their cost will be even less as demand and production quantities increase.

Digital computers also are going under the hood to improve engine performance and handling characteristics. Oldsmobile installed a digital system in its 1977 Toronado to provide electronic control of spark plug firings, thereby boosting fuel economy. Computer-controlled anti-skid braking systems, already being tested in the U.S. and abroad, also are on the horizon for car buyers.

2ND ANNUAL T-T-TRIVIA-NOSTALGIA TEST

Well, it's that time again . . . the annual April craziness gets to the editors of DRIVER, too, so here we go with the Second Annual DRIVER Trivia-Nostalgia Test.

A score of 90 or better means you are a true trivia nut and you *must* be at least 75 years old or you wouldn't remember all that stuff! From 70 to 90 means you probably read a lot, particularly old Hot Rod Magazines, and a score lower than 70 means that you're normally sane and refuse to pay much attention to the trivia and nostalgia that drives the rest of us crazy!

Score yourself at two points for each correct answer. Good luck!

1. Let's start off with an easy four part question; in 1922, the Wills Sainte Claire Co. introduced a roadster powered by a 65 hp overhead-cam, V-8 engine. The car also had a rather distinctive radiator ornament. So:

A. Are we lying, or was there really a car called the Wills Sainte Claire?

B. If it did exist, was it possible that it had an overhead-cam, V-8 'way back in 1922?

C. What kind of animal appeared on the radiator ornament?

D. What color was the animal? (How's THAT for trivia?)

2. Match the safety devices with the year they first appeared at the Indy 500.

A. Safety helmets	1. 1911
B. Balloon tires	2. 1932
C. Rear-view mirror	3. 1925

3. WE love initials . . . do YOU love initials? We'll find out! The following motorcycle makes have been or are still produced . . . can you tell what their initials stand for?

A. A.J.S.	D. N.S.U.
B. B.M.W.	E. M.V.
C. D.K.W.	F. M.Z.

4. What was the largest displacement engine (in CCs) that a *manufacturer* ever installed in a motorcycle?

5. How many cylinders did the 1921 British Radial have?

6. What motorcycle was not air or water cooled, but oil cooled?

7. Shipman's Rule for motorcyclists states, "What you neglect to wear will uniquely determine how you crash or fall." To the average rider this means:

A. If you don't wear your gloves, you'll fall on your butt.

B. If you don't wear your goggles, you'll hurt your wrist.

C. If you don't wear your boots, you'll stub your finger.

D. If you don't wear a helmet, you'll fall on your head.

8. In the '50s, we used to put echo cans on our cars. What were echo cans?

A. Outhouses so big you could hear echos just like at Echo Canyon.

B. ECHO is an acronym for Electronic Control of Horsepower in the Overdrive.

C. No. 303 tomato juice cans welded into the exhaust system to act like resonators and make the pipes LOUD!

9. Four points each if you answer the following questions *honestly!*

A. Did you ever go out and buy seat belts for your car so you could show your girl how much you cared for her, and then defeat the interlock so she couldn't unbuckle and get away from you at the drive-in?

B. Did you ever run into a tree because the foxtail on the antenna got in your eyes?

C. Outside exhaust systems are nothing new, but did you ever lose your best girl because she burned her leg on your lakes pipes?

D. Dock yourself four points if you think "Cruiser Skirts" are the girls you see down on 8th Avenue.

10. Ladies, the following questions are for you. Use the same rules as question 9.

A. Did you ever have a flat tire on the dark road behind the State Prison and then remember that your boyfriend was gonna teach you how to change a flat and you said "next week"?

B. Did you ever call that guy you were trying to meet and ask him if he could get your car running? Was the rotor in your purse?

C. Did you think "piston" was a dirty word?

D. Did you believe your boyfriend when he told you he carried that blanket in the back seat so he could "use it to smother engine fires"?

11. You normally carry something with you that can be used as a thickness gauge (to adjust points or whatever) in an emergency . . . what is it?

12. What do the following initials mean?

A. FoMoCo	D. REO
B. BOP	E. SOL
C. OEM	F. ASAP

13. What is a Roger Hull?

A. A Navy term that means "Yes, Sir, the bottom of the boat is still with us."

B. An Air Force term air traffic controllers use when replying to a radio transmission from an HU 11.

C. An unreconstructed XL+ who refers to 50 gallon trash cans as "garages for Hondas."

D. Editor of Road Rider, one of the best magazines going for road riding motorcyclists.

14. You've just rebuilt your engine and you haven't got the timing just right yet. As you crank 'er over, the critter backfires through the carb and

ignites the gas therein . . . whad-dya do now?

A. Exit, stage left . . .

B. Quickly check your insurance policy under the "Fire & Theft" heading.

C. Spray the fire with a water hose, thereby spreading flaming gasoline all over your engine compartment.

D. Continue cranking the engine, and fully depress the accelerator. This will suck the burning gas into the combustion chambers where it's *supposed* to burn.

15. Name the people associated with the following clues:

A. Winningest stock car driver in history.

B. Motocross manager for AMA.

C. President of Safety Helmet Council of America.

D. Original Isky Cam man.

16. Who belongs to the following nicknames?

A. Big Daddy
B. Cha Cha
C. Fireball
D. Cannonball
E. The Snake
F. A. J.
G. Hurricane

17. OK, it's over . . . this is the last question. There are no points awarded for this question, but answer it anyway.

For many years, automobile restorers puzzled over why vintage tin was attacked by a form of fungus. They could understand corrosion of metal and wood rot, but not this third type of damage. Recently, it has been discovered that the fungus is caused by a parasite called "looflirpa," named from the Latin meaning "to go backwards." Looflirpa are aptly named because they go backward instead of forward and thereby eat metal instead of forming deposits on it.

TRUE or FALSE?

ANSWERS

1. A. Yes, there was.
B. It sure did!
C. A goose
D. Gray

2. A-2
B-3
C-1

3. A. Named for its inventor, *A. J. S*tevens
B. *B*ayerische *M*otoren *W*erke
C. *D*ampf *K*raft *W*ager
D. Taken from the town name *N*eckar*s*u*l*m
E. *M*eccanica *V*ergheera
F. *M*otorraderwerke *Z*schopau

4. In 1900, a Frenchman named Buchet fitted a 4,245 cc twin into his line of three-wheelers.

5. Three cylinders. They were in the form of a three-cylinder, radial engine and were spaced 120° apart.

6. The 1929 Windhoff, made in Germany.

7. D

8. C. That was when we believed that "louder" equalled "faster."

11. Your military I.D. card. It's .018 inch at the outer edge, and .023 inch one-quarter inch from the edge.

12. A. Ford Motor Company
B. Buick-Olds-Pontiac
C. Original Equipment Manufacture
D. Ransom E. Olds, father of the REO automobile
E. Out of luck . . . like you're outta luck when you've crashed your bike and your head is gonna bounce on the pavement and you aren't wearing your helmet.
F. Alcohol Safety Action Project

13. C and/or D

14. D. Other options include using a dry-powder or Halon (tm.) fire extinguisher, or covering the flames with a fire-proof blanket or cloth.

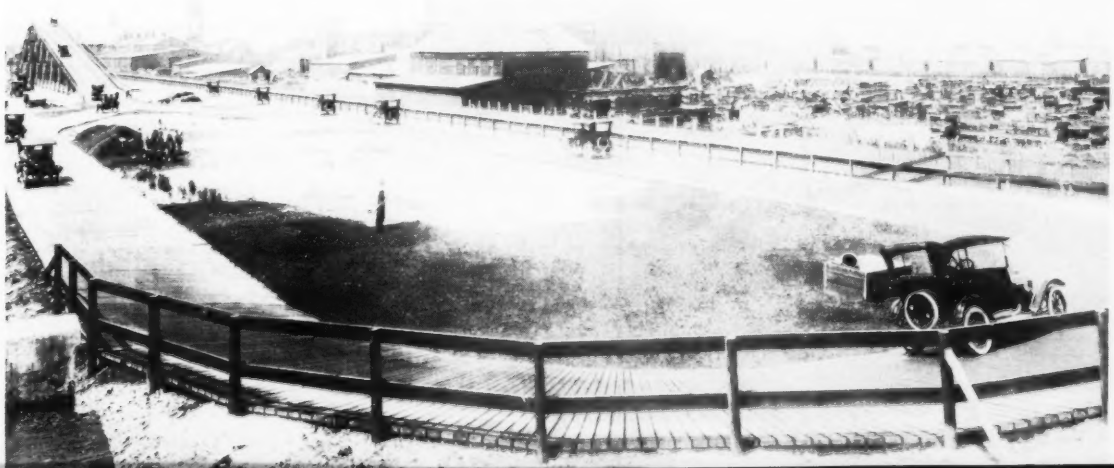
15. A. Richard Petty
B. Mike DiPrete
C. Ivan Wagar
D. Ed Iskenderian

16. A. Don Garlits
B. Shirley Muldowney
C. Fireball Roberts
D. Cannonball Baker
E. Don Prudhomme
F. Anthony Joseph Foyt
G. Bob Hannah

17. If you said *false*, "looflirpa" to you.

If you said *true*, April Fool!

• I dunno, Mel . . . BOARDYARD just doesn't have the same ring as BRICKYARD . . .



BACKFIRE

ANOTHER SLANT ON SELF-SERVE

Your article "Gas Up 'n' Go" (Dec '76) was very very informative. But, the idea of vehicle checks only at every fill-up (no mention of checking before leaving the driveway) is a little shakey.

Agreed, costly repairs and possible driver-neglect-type accidents can be reduced at the gas pumps. How many accidents happen *before* the pit stop due to neglect? Important daily checks should not be put off until it is time to gas up the old buggy. Weather, time, and daylight permitting, the simpler checks (appearance of tires, clean windshield, oil/water levels, operation of lights and adjustment of mirrors) would be more effective if done prior to leaving the house. Vehicle-check habits can be as important as seat belt or driving habits.

Heavy things such as power steering and brake fluid level checks could require advice/instructions from an attendant. Some of these could consume enough time to convince the clock-watcher that Saturday morning would be a better time.

MSgt John D. Cook, USAF
PACAF CESMET
APO San Francisco 96274

Sgt Cook's way is ideal, but most drivers just don't have time for the daily check of tires and fluid levels (mirror adjustment is a daily matter). What worries us are the drivers who don't do maintenance checks at all, even when they're in the station for gas.

OILS AND ADDITIVES

This office currently maintains the technical managerial responsibility for fuels and lubricants RDTE programs within the Department of the Army which includes specification responsibility for POL products designed for ground equipment. In reviewing the "Backyard Mechanic Reprint," several statements appeared which were inconsistent with findings generated through our RDTE effort. To clarify these points, the following comments are presented:

On page 10 under "Why Change Oil," the statement is made that protective additives can evaporate. Additives do not evaporate as they are not relatively volatile. They do, however, become depleted as their use is sacrificial to preserving the quality of the oil.

On page 11 under "Oil Quality," the descriptors in parenthesis for API SD vs. SE performance classes are not correct. There is no "deluxe" or "extreme" service. This can be verified by reviewing the SAE J183a Oil Performance and Classification System. All commercial-design post-1971 cars *must use* SE oils.

On page 12 under "Additives," a statement is given relative to "aftermarket oil fortifiers" which must be clarified or verified. The statement is made that "a consumer-oriented research group" found these proprietary compounds do work as advertised. This statement is *challenged* in view of our previous experience and constant review of all open literature. In 1973, a study was completed on engine oil supplements by this office. This involved 18 products, and in each case, none was found to "enhance" properties of an oil fully qualified under our military specifications.

On page 27 under "Chart B," a statement is made relative to possible use of "KEEP-COOL" radiator additives. Laboratory investigations conducted by this office revealed these proprietary products offer no enhanced system performance capability. More specifically, most "KEEP-COOL" additives are water solutions of inhibited ethylene glycol and are no more effective than a good antifreeze. They contain essentially the same inhibitor in amounts not sufficnent to appreciably affect the corrosion properties of the coolant.

Mr. Maurice E. Lepera, USA
Chief, Fuels and Lubricants Div.
USAMER&DC/DRDME-GL
Fort Belvoir, VA 22060

The series was originally researched and written in early 1972 and may not have benefitted from the additional knowledge about lubricants that was being developed at that time and later. Your 1973 study of additives (supplements) would certainly have been of interest to us because, at the time the articles were written, no such formal study seemed to be available.

We hope that our readers will benefit from your information and that it will correct any misconceptions generated by our "Backyard Mechanic" reprint.

DEFENSIVE, COURTEOUS DRIVING

For a long while now I have been convinced that our approach to driving safety needed a new element added to it. We have begged, pleaded, and

letters to the editor

Address your letters to:
Editor
DRIVER Magazine
AFISC/SEDD
Norton AFB CA 92409

threatened drivers into heeding our most famous slogan "Drive Defensively." Yet on most highways and roads we see more "offensive" drivers than ever before. Perhaps what is needed is to inject a new word into our drive safe programs. A very simple word which brings order out of chaos: "Courtesy."

I propose a new campaign slogan and ask all drivers to practice "DEFENSIVE, COURTEOUS DRIVING."

Lt M. G. Thomas, USN
Aviation Safety Officer
HSL-32
NAS Norfolk, VA 23511

PLAUDITS!

We have just received the Jan '77 edition of DRIVER. On behalf of the entire staff and the members of the AMA nationwide, let me take this opportunity to congratulate you on an excellent article featuring motorcycle safety.

It looks as if MMC Dennis Hamlin of the Norfolk NAS Motorcycle School has a very effective course in operation.

Again, the staff enjoyed the article and we thank you for your support of the sport and your efforts to further motorcycle safety.

Charleene Orcutt
American Motorcyclist Association
Westerville, OH 43081

Thank you so much for the kind words!

I just read your article "Why Don't We Do It This Way?" (Jan '77). Thank God someone finally took notice of Dennis Hamlin and his motorcycle course! I personally attended this course in July '76, solely because it was (and still is) a requirement to get a base sticker. Let's face it, I've been riding dirt and street for over five years.

Chief Hamlin and his Merry Men put on an outstanding classroom and practical course of instruction. Not only is it concerned about one's driving skills or emergency tactics, but other things like maintenance, the total tool kit, and individual state riding laws. The club house is full of motorcycle parts salvaged from accidents. These are not meant to scare you, but to promote common sense and develop sound judgment.

I was so impressed by the program that I joined the N.A.S. motorcycle club, "The Golden Wheels," of which Dennis Hamlin is a member in good standing. I recommend anyone in the Norfolk area attend this course and hear and see what it is all about.

GMM2 Scott F. Verkuilen, USN
USS Dahlgren DDG-43
FPO New York 09501

SAFETY HELMETS

In the past few months I have read several articles in DRIVER dealing with safety helmets and the motorcycle. I have been riding motorcycles, on and off the road, for the past nine years.

Prior to my joining the service, I spent 2½ years participating in the off-road novice racing circuit. It was during this time that I learned the real value of a helmet. It has saved me from some serious head injuries as well as my life on more than one occasion. While still active in the racing circuit, I believe I fell off my bike in every way possible at one time or another; many times at 50 mph and more. It was with thanks to my helmet that I was able to get up and walk away with just a few fractures and cuts.

There is one other point that I want to make that I have not noted in any of your previous articles: When and if you decide to purchase a helmet, be sure to check into the quality of head gear you are getting. Many of the so-called safety helmets on the market today aren't worth the wooden peg they are hanging on in the stores. My suggestion is to check into the Bell series of helmets. In my opinion they are the best. If you care to check into it, you'll find that 75% of the professional motorcycle racers in the U.S. wear Bell helmets.

RMSN B. W. Laine, USN
NAVFAC PT SUR
Big Sur, CA 93920

There are a number of good helmets available. Look inside for the seals of approval. If you don't trust your own knowledge, go to a reputable shop and ask questions. Much of what makes a quality helmet is not necessarily visible.

☆U. S. GOVERNMENT PRINTING OFFICE: 1977—783-013/6

EMERGENCY!

STUCK THROTTLE

You're driving along a street or highway and for some reason you must slow down. You reduce the foot pressure on the accelerator (which controls the throttle), but the accelerator pedal does not return to its normal position and the car continues to speed on.

Or for some reason the accelerator pedal is suddenly depressed to the floor, and the car lurches forward at a high rate of speed, even though you've taken your foot off the accelerator. What can you do?

- If you're on the open highway with space around you, first lightly TAP the ACCELERATOR pedal a few times to see if it will spring back to normal position.
- Next, try to pull the pedal up with the toe of your shoe, or have a front seat passenger reach down and do it. DON'T reach down yourself. Keep your eyes on the road.
- If you must slow down rapidly, turn the IGNITION to OFF and APPLY BRAKES. Be sure you turn the key to OFF, not LOCK. On most cars you can't turn the steering wheel when the key is in the lock position. Turning off the ignition will require increased physical effort to steer and brake a car with power equipment. Don't pump the brakes and some power may be retained.
- As the car slows down, keep steering. Guide it off the road if you can.

The most common cause of a stuck accelerator pedal is binding by the floor mat or rug, and that is easily remedied. If you can't locate the problem, DON'T DRIVE THE CAR until you get help. If you think you have solved the problem, apply the parking brake, put the gear selector in PARK or NEUTRAL, and start the car. Exercise the pedal a few times to make sure it returns to normal position after you remove your foot from the pedal.